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# Divining

**Forgotten  
Gems**

Antigua

Bali

Curacao

**& Snorkeling**

**Are We Loving  
Our Reefs to Death?**

**Taking the Course**

**Uncommon Behavior  
Of the Common Squid**





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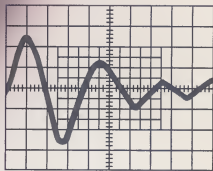
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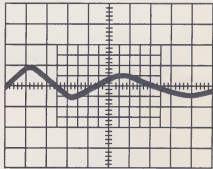
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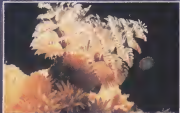
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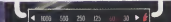
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# Editor's Page

Some years ago, I took my scuba certification course and wrote about the experience for the first issue of *Diving & Snorkeling*. Omitted from that account was a small incident that continues to annoy me to this day. It was a carryover from the macho days of diving, and that I participated in what bothers me, not the incident itself.

It was my instructor's practice, as a final gesture at the end of the open water session, to have all his students jump from a rock into the quarry where the dives had been made. This was done in wet suit, but not with any equipment. The height was no more than 10 or 12 feet, but if one were not accustomed to diving, it was unnerving.

After much cajoling, I dove from the rock or jumped, I don't remember which, but the experience, which served no purpose other than a rite of passage, marred an otherwise totally professional and competent course of instruction.

About a year ago, Cathie Cush, whose byline appears frequently in *Diving & Snorkeling*, asked if I would be interested in an article on her personal experiences in becoming a scuba diving instructor. I assured her I would and Cathie's article appears on page 16. I never mentioned my "jump" to Cathie or anyone for that matter, but I strongly suspected a scuba instructor's course would include similar if not more unnerving and strenuous stunts.

When the manuscript arrived some months later, I was surprised to find no such shenanigans were included in her week-long program. To the contrary, Cathie, although harboring trepidations herself, found the entire course was focused on teaching her how to teach diving. It's nice to know times change . . . and for the better.

A name well-known in the diving world, but whose byline has not graced these pages in some time, returns with this issue over a most unusual article. Marty Snyderman, whose exploits as a cinematographer are well documented in the *Wild Kingdom* series, turns left when most divers turn right and heads for the kelp beds off Southern California. What Marty discovers over the vast expanses of sand is the unusual mating ritual of common squid which turn out to be fascinating creatures. His account and excellent photographs begin on page 44.

Traveling divers will find a potpourri of destinations to tempt them in this issue. Most divers only see the airport at Curacao where they change planes enroute to her famous sister island, Bonaire. But those who stay behind will find, as Susan Speck did, that this largest island of the Netherlands Antilles has many attractions, diving not being the least of them. Susan's article begins on page 68.

Antigua is another island passed by during the development of Caribbean dive destinations. With only two dive operations on the island, you can be assured of finding excellent reefs and wrecks showing little, if any, sign of diver wear and tear. Ellsworth Boyd relates his experiences on this sleepy island, once the seat of British naval power in the Caribbean, on page 12.

Highlighting less frequently dived islands segues nicely into Nancy Sefton's article on page 8, "Are We Loving Our Reefs to Death?" As the popularity of diving continues to swell and more divers visit famous reefs, their sheer numbers are beginning to take a toll on the reef community. Corals and sponges suffer most from fin damage and divers hanging onto them to counter currents. Surprisingly, ascending air bubbles scrub the surface of walls and damage the attached inhabitants. Nancy's article is a good reminder that everyone must be extremely careful or the wonders of the undersea world we cherish may soon disappear.



Illustration by Nick Fain

*Eduard Montague*

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*By our sheer  
numbers alone, we  
are slowly destroying  
the most popular  
tropical reefs.*

# Are We Loving Our Reefs to Death?

BY NANCY SEFTON

*A pink sponge in perfect condition.*

**S**port divers today may well be living at the ideal time. Access to the vast and beautiful undersea world made possible by the invention of scuba, has been widened by the development of dive resorts wherever clear water and coral reefs exist.

But a few decades into the future, the undersea attractions we enjoy today may have changed, and not for the better.

Ideally, a coral reef is a self-sustaining, timeless entity with its inhabitants performing their assigned roles, dying, and being replaced.

When a diver descends to a favorite coral reef, change is the last thing he wants to find. He seeks well remem-

bered familiar scenes—pale shafts of sunlight rippling across coral heads, foraging fish, undulating sea whips, a world of diffuse blue wrapped in silence.

We assign frivolous names to dive sites that have lain unnamed for thousands of years. Once named, their popularity spreads and although in many cases the site is no more spectacular than any other, divers flock to it. Sometimes, we bestow special protection by designating an area as a marine park. But such status is merely a commitment to limit the removal of marine life in hope of attracting more divers. Herein lies the major threat to the reef community—the presence of large numbers of divers on a daily basis in what is rapidly becoming a year-round season.

To paraphrase the late, great naturalist John Muir: "Man, by his very presence, eventually destroys what he comes to see."

Muir's grim prophecy conjures up images of smog-shrouded national parks, trampled vegetation, trashed beaches.

Unfortunately, divers can now extend that image to coral reefs where too many visitors have all but destroyed many a favorite dive site.

There was a time when diving's biggest problems were souvenir hunters, spearfishermen, and heavy anchors crunching the fragile corals on a daily basis. Nowadays, conscientious dive operators and marine park status thankfully protect many premium dive sites worldwide from this type of destruction.

But we divers remain. Our numbers are growing, and every time we ascend, we leave behind a reef community slightly worse off. Studies carried out in the Florida Keys concluded that diver traffic, even in marine parks, gradually wears away the reef's prominent features.

The irony of this relatively new problem is noted by Dace McCoy, the attorney who designed legislation for a new Caribbean marine park system. The island residents learned to accept the new laws, thanks to an exhaustive educational campaign, and a rapid increase in

*Nancy Sefton, a free-lance writer and underwater photographer, is one of the 20 residents of Little Cayman Island.*

marine life populations was evident after only one year.

However, once the parks were established, luring more divers than ever, new concerns arose.

"As a group, divers tend to be sensitive to the environment, and yet they want to interact with it. They don't drop beer cans, but they break off coral with their fins; and it is amazing how many people have dived for years and don't know that coral is an animal, not a plant, and that it takes hundreds of years to grow . . . a coral reef is a slow-regenerating environment," Dace said.

The question becomes, "Can a reef survive its own popularity?"

own impact on the coral reef ecosystem? Can we reverse a seemingly irreversible trend?

### Self Control

Something as simple as buoyancy control can make a big difference. If we are too light, we tend to grab onto the reef to keep ourselves from involuntarily floating upward. If we are too heavy, we plow little furrows through the reef, leaving trails of broken coral branches.

Some divers habitually overweight themselves, and drop like stones to the reef substrate where fragile corals absorb the impact.

Too often, new divers don't yet under-

However, many live-aboard dive boats proudly promote a "hands-off" policy when it comes to diver supervision. Seldom does the crew watch the passengers underwater, leaving neophytes to crash about the reef like bulls in a china closet. Perhaps more live-aboard dive-masters should monitor initial dives, watching for customers who may need help with buoyancy control.

Current diving is not everyone's cup of tea. Divers unaccustomed to currents sometimes try to fight them rather than move with them. This results in damage to corals that get in the way of the diver's forceful maneuvers.

### Bubbles

In areas featuring walls, canyons and tunnels, divers' bubble streams produce a scouring action as they rise against vertical surfaces. I've watched a favorite wall site systematically stripped of its more precarious residents; those perched tenuously on the drop-off's sheer face.

A diver can do little to control his bubble stream. Even if he stays away from the wall, currents may carry his bubbles against it, dislodging life forms. It will be a long, long time before we are all equipped with re-breathers!

### Fins

Fins give us mobility underwater. Without them, traveling along the reef is like trying to walk against a head wind. Yet divers sometimes overuse their fins to the detriment of the corals beneath them.

Novices tend to kick bicycle fashion, often holding themselves upright, unmindful of the damage their fins are doing. The horizontal diver kicks up less sand and has less contact with the reef below. Unfortunately, we acquire grace underwater only after a succession of dives and our learning period can be costly to the reefs.

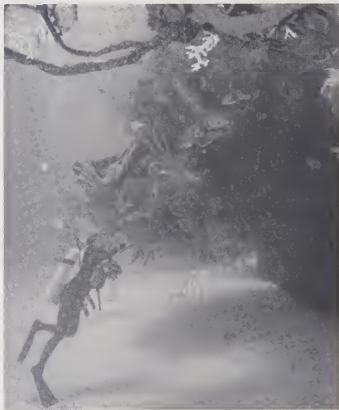
Elongated, and heavier style fins may provide speed for extended journeys high off the bottom, but near the corals, they constitute a destructive factor unless the wearer slows down and kicks carefully.

Many of us still allow our long, heavy consoles to drag behind us as we skim the reef. Tucking them inside the BC waistband or passing them through the armhole are two solutions, as long as the dials are still easy to read.

### Photographers

As much as we may hate to admit it, photographers, whatever their level of expertise, are among the worst offenders when it comes to interference with the reef. We are taught by the experts to get low and aim upward at our subjects; this necessitates standing, kneel-

(Please turn to page 76)



*Touching a coral, no matter how delicately, should not be done.*

Today, some Caribbean destinations are considering possible restrictions on the numbers of divers allowed in a marine park at any given time. The industry has thus come full cycle; in its infancy, the challenge was how to lure more divers. Today, the challenge is to limit their numbers.

### The Diver's Responsibility

Who, exactly, is to blame? Each of us, and I include myself, adds to the stress experienced by the reef ecosystem when we dive it. Our intentions may be good, our actions supposedly benign, our regard for the health and welfare of the reef sincere, but to our dismay, our very presence may inflict wounds that heal slowly, perhaps never.

How can we as sport divers lessen our

stand the rudiments of buoyancy control. Perhaps their instruction was incomplete, but more likely, their swimming skills were never perfected and buoyancy control is slow to come. Divers not yet "at home" in the underwater environment may also make sudden, panicked movements whenever a fin, console or some other part of their gear becomes snagged, or whenever they accidentally brush against a potent reef stinger such as fire coral. Jerking oneself free inevitably injures some small portion of the reef.

Often, tropical resort divemasters must assume responsibility for "on the dive" training of the novice, helping him to control his buoyancy and relax enough to move about the reef with grace.

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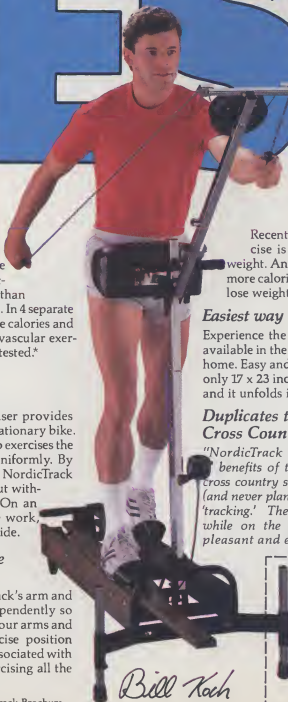
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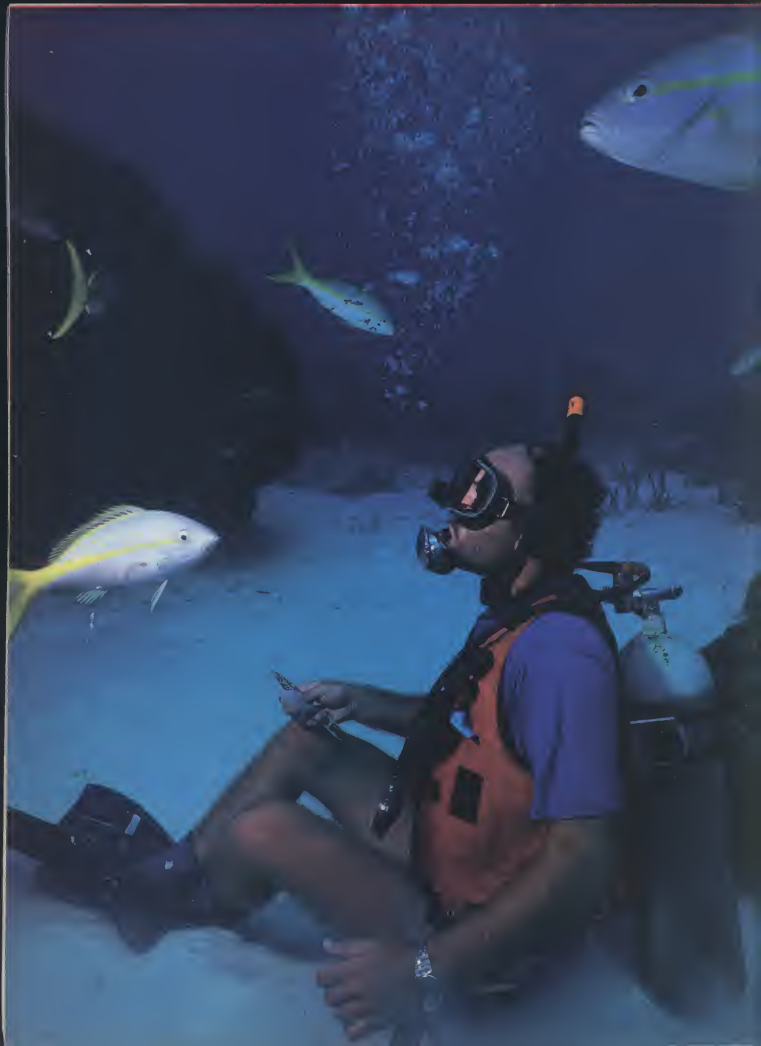
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BY ELLSWORTH BOYD

*Long favored by European travelers, American divers are just discovering this quiet island steeped in history.*

# Antigua Arrives!

**A**ntigua, an independent nation only since 1981, has been a popular resort for Europeans for many years and is at last being discovered by American divers. Those who have visited the 108-square-mile island, rave about its British traditions, beauty, history, friendly people and exciting dive sites.

On a sun-swept tropical island that boasts 365 white sand beaches—one for every day in the year—the development of its diving potential was inevitable. That is being done rapidly thanks to veteran divemaster, John Birk.

Birk owns and operates Dive Antigua, housed at Jolly Beach and Halcyon Cove Hotels, only a 10-minute drive from St. John's, the capital city. A transplanted Toronto resident, Birk has lived on the island for 16 years and knows its reefs and wrecks as well as native-born Antiguaners.

Cade's Reef, a 30-minute boat ride from the hotels, is four miles long, two

miles wide, interlaced with 30 charted dive sites and many more to be discovered. A barrier reef, Cade's has inner, middle and outer areas ranging in depth from 10 to 200 feet with 80- to 100-foot visibility.

A typical dive is "Cade's Passage," where the dive boat anchors in 30 feet of water on the inside of the reef. Divers swim through a wide swath in the reef where rock beauties, angelfish, blue chromis, sergeant majors and a variety of other colorful tropicals school over brain, star and elkhorn corals. On the outside of the reef, a little deeper, schools of yellowtail snapper, mackerel, jacks and jolthead porgies feed on rich nutrients drifting in a light current.

Four hundred yards from Cade's Passage is "Snapper Ledge," where the reef drops from 50 to 80 feet, forming caves and crevices which shelter red snapper, schoolmasters, spotted drum, lobsters and a 10-foot nurse shark named "Nannie."

Farther south is Sponge Reef, an area filled with basket sponges large enough to hold a diver. In 40 to 50 feet, bizarre shapes appear from beneath canaries and ledges. Yellow trumpetfish, red-spotted hawkfish and curious black dur-

geons show little fear of divers, while a fat, green parrot fish grates small chunks of coral between its thick-set teeth. Red soldier fish guard the entrance to a dark hole in the reef, sentinels protecting chambers where mating rituals transpire. Spirals of pillar coral, some over four feet high, grow in clusters on the reef, looming like church steeples in a heavenly undersea environment.

Small tube sponges protrude from the reef like smokestacks from a miniature factory. Grunts, damsels, hamlets and trunkfish circle the sponge as if they were workers going to and from their jobs. A lone barracuda glides in silently, stops motionless in the light current, then departs just as stealthily as it arrived. This site, like so many on Cade's Reef, is so alive with fish, coral and sponges, it's difficult to take it all in during one dive. Marine life is so abundant, no two dive sites are alike.

It's the same on Weymouth Reef, another area Birk has charted. Named after the missionary ship, *Weymouth*, that brought Englishmen in the 1700s to spread God's word, the reef and wreck are visited by hogfish, yellow goatfish, spotted drum and mutton snappers.

*Ellsworth Boyd is a Professor of Education at Towson State University, Baltimore, Maryland. He last wrote for Diving & Snorkeling on the search for the lost bones of the Peking man.*



Bits and pieces of the wreck are still there, heavily coral-encrusted, but a reminder of the English influence on the Arawak Indians who resided on Antigua in the early days.

Shipwreck enthusiasts will have a field day on Antigua. Over 90 wrecks, dating from 1650 through 1984, have been traced by local historians. There are slavers, warships, merchantmen, schooners, brigs, ketches, yachts, tugs and catamarans sunk in various depths around the almost circular island.

A favorite wreck is the *Jetias*, a British freighter that sank off Diamond Rocks in 1917 while embarking on a return trip to London. A 300-foot-long wreck sunk in 25 feet of water, she offers divers lots of bottom time. Her triple expansion steam engine is a sight to behold with three cylinders, connecting rods, control rods, condenser and two boilers still intact. Although her decks have fallen in and she's spread out on the bottom, divers still retrieve souvenirs of general cargo. The ship's four-blade prop is still there and provides a nice photo background.

The *Andes*, a British barque transporting pitch from Trinidad to Mexico, sank in 25 feet in Deep Bay, south of St. John's harbor. Part of the ship breaks the surface at low tide making her another wreck that affords plenty of bottom time.

On the south side of the entrance to St. John's harbor lies a tugboat that sank when it experienced water pump problems and its seacocks were accidentally

left open. Resting in 45 feet, her engine intact, the tug's six-foot-high bronze propeller is still in good shape. Divers enter the tug on its port side and can still see the water pump resting in a vise on a mechanic's workbench.

Divers often stay at the Jolly Beach or Halcyon Cove Hotels where Birk has his Dive Antigua services. He will, however, make arrangements to pick up divers who are staying at neighboring hotels or guest houses. Special air, hotel and dive packages for groups are available from Cruise and Travel World, 1506 Springs Plaza, Longwood, FL 32750. Phone: (305) 862-4300.

Birk's two 25-foot custom boats, powered by 235-horsepower Johnsons, provide speed and comfort to and from dive sites. The shoreline, dotted with one palm-fringed beach after another and a mountainous tropical rain forest rising in the background, provides some of the prettiest scenery in the West Indies.

There is one other dive operator in Antigua. John Evans, a Scotsman, operates out of the Galleon Beach Club and Hotel on the southern tip of Antigua near historic English Harbor. Reefs are close to shore here and feature towering coral heads. Tuna are frequently seen schooling in this area with the reef dwellers. For details write to P.O. Box 231, High Street, St. John's, Antigua. Phone: 809-46-24788.

It is best to visit Antigua in the spring or summer when the rates are lower. Diving is better at this time of year when

winter winds have diminished.

Steeped in history, Antigua's illustrious explorers blazed trails of infancy and glory across the island beginning with the Arawaks, then Christopher Columbus and finally Horatio Nelson. Antigua didn't become an English stronghold in the New World overnight. Columbus discovered the island in 1493 and named it after the church of Santa Maria de la Antigua in Seville. Except for a brief French occupation in 1666, Antigua remained British from 1632 until its independence in 1981.

The Arawaks settled in Antigua long before the arrival of Columbus, traveling up the chain of the Lesser Antilles by canoe. Some reached the Leeward Islands and found Antigua to be ideal for cultivating the crops they needed. They were an agricultural tribe whose main staple was the cassava plant. Seafood was also a main food source, especially grouper, parrot fish, barracuda, shark, crabs, turtle and conch. The Indians hunted lizards and a small animal called agouti.

From 1520 to 1705 Carib Indians, who drove the Arawaks out, fought the Spanish, French or English; whoever occupied the island at the time. But the British, who occupied Antigua for 315 years, were rid of the Indians by 1720 when they established one of the staunchest naval fortifications in the Caribbean. Warships were necessary to protect Antigua's trade, and English Harbor—two spits of land hugging a narrow entrance to a snug anchorage—was impenetrable. By 1745, it was a Royal Dockyard where His Majesty's Frigates *Southsea Castle* and *Lynn* were careened, repaired and made ready to protect merchant ships of the West Indian sugar trade.

By 1779, the yard was expanded and became the principal British naval base in the eastern Caribbean. In the ensuing years, the English fought the Spanish and French, using English Harbor and its yard as a base to patrol the thousand miles that encompassed the West Indian Islands.

In 1784, a flamboyant young naval captain who later became a famous British admiral at the Battle of Trafalgar, arrived for a stint of duty, preparing for engagements with the French. The yard was eventually named Nelson's Dockyard after the intrepid British naval hero and nobleman, Lord Horatio Nelson.

Today, Nelson's Dockyard, English Harbor and Shirley Heights offer tourists a journey into the past. From high atop the mountain ridge, the ruins of the fortification at Shirley Heights offers a spectacular view of the harbor and surrounding countryside. Modern sailboats and motor yachts anchor in the harbor once the base of naval cutters,

gun schooners and Lord Nelson's frigate, *Boreas*.

English Harbor has been carefully restored and in 1982 won the Silver Otter Award from the Guild of Travel Writers in Britain, given on a worldwide basis for a project which benefits tourists as well as the local community. The dockyard, once compared to Jamaica's industrious Port Royal, contains a completely refurbished naval base.

The Admiral's House is a museum displaying ship's models and artifacts retrieved by divers from the harbor and surrounding waters. More mementos from the halcyon days of British supremacy in the Caribbean are on display at Clarence House on the promontory of Shirley Heights.

While English Harbor is the main draw on the South Shore, the North Shore is not without its principal attraction. St. John's, Antigua's capital, is a deepwater harbor city whose main streets slope toward the sea.

Goats run free along the dock, natives repair and paint sturdy old fishing boats, and trade vessels unload charcoal, fruits, vegetables and dry goods. There are 75,000 people on the island and over 30,000 of them live in St. John's. On Saturday morning, at the market on the wharf, it seems every resident of the city comes at one time to shop.

Other St. John's sights include: an open park in front of the new Parliament Building built when Antigua gained independence in 1981; St. John's Cathedral, built in 1683 and restructured in 1847; the Governor's House, built in the 17th century colonial style with Georgian architecture and exquisite gardens; Fort James at the entrance to St. John's Harbor; The Archives, filled with Antiquarian documents and historical records dating to the Arawaks; the Rum Distillery, where Cavalier Rum is brewed and shipped to Europe and the United States.

The main shopping area in St. John's is between Redcliffe and Newgate



streets. Duty free shops offer bargains in perfumes, crystals, bone china, liquors, shell jewelry, carvings, cotton garments and a host of other imported and island merchandise.

Night life is plentiful in the large hotels where steel bands, Calypso singers and dance combos perform regularly. In St. John's there are discos, jazz emporiums, fire bands and limbo shows. Simply sipping a rum punch in a small bar is also fun. There are four casinos on the island if visitors wish to flirt with Lady Luck.

Restaurants feature island favorites such as roast pig, curried conch, fresh fish, breadfruit, yams, fried bananas, avocado salad, papayas, mangos, guava, soursop, coconut, and black pineapple renowned for its sweetness. Planter's and rum punches, pineapple and coconut crushes and a host of other tempting rum concoctions are popular.

Currency is the Eastern Caribbean Dollar, called "E.C." Rates of exchange are based on the U.S. dollar: \$1 U.S. equals more than \$2 E.C. Since shopkeepers and taxi drivers will accept either U.S. or E.C. dollars, be sure to clarify the currency when paying. Always ask: "Is that E.C. or U.S.?"

Hotels usually include a service charge for general services. Since most of the island is operated on 220 AC cycle, it is prudent to bring your own converter for 110 AC appliances. Although converters are available at the hotel desk, sometimes there is an inconvenient waiting time in order to use them. Island water is safe to drink. A modern telephone system connects the whole island, including circuits to the U.S., Canada and the United Kingdom. Rental cars are available and it's fun to tour the island on your own. The official language is English. Trade winds cool the island year-round with temperatures av-

eraging in the low 80s. Entry requirements for residents of the U.S. and Canada may be: a passport, birth certificate, voter's registration card or a certificate of naturalization. A driver's license is not acceptable.

Antiguans are very warm and friendly people. They seem to enjoy visitors and usually go out of their way to help them. They greet you with a cheerful, "Good morning" and are quick to offer assistance when needed. It is not uncommon for islanders to go back the way they came in order to make sure the visitor is heading in the right direction.

Coolidge International Airport is modern and well-kept. Direct flights leave from New York or Miami via British West Indies Air Lines. The flight from New York to Antigua is three and a half hours. The winter of 1988 was so busy, it was difficult to book a flight to Antigua! Flights from Miami range from \$350 to \$380 (round trip). It's best to purchase a package consisting of flight, room, board and diving.

There are low and high season rates at many hotels.

## Departments of Tourism for Antigua are:

**Antigua Dept. of Tourism**  
Thames Street, P.O. Box 363  
St. John's, Antigua  
Phone: 20029/20480

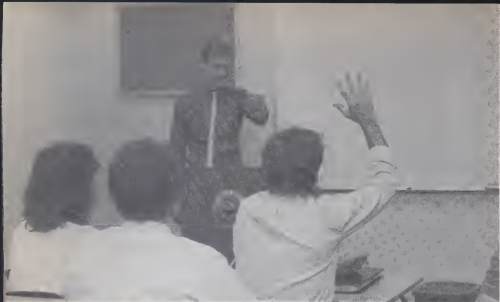
**Antigua Dept. of Tourism**  
Suite 311  
601 Fifth Ave.  
New York, NY 10020  
Phone: 212-541-4117

**Antigua Dept. of Tourism**  
60 St. Claire Ave. East  
Suite 205  
Toronto, Ontario M4T 1N5  
Canada  
Phone: 416-961-3085

Nelson's Dockyard



\$



# Taking

*Unto our  
diving instructors  
we place great  
trust. So, just what  
does it take to  
earn that clipboard?*

*Students practice what they soon will preach.*



Photo by Jeffrey Evan Bozanic

**N**ine of us had come together to prove to ourselves and the rest of the world we had the right stuff—that we had what it takes to walk around pool decks, clipboard in hand, visor pulled low over our brow, impressing the hell out of members of the opposite sex with our obvious “cool” and our ability to pay exorbitant amounts of liability insurance.

We wanted to be scuba instructors . . . Propped up on a motel bed in a room I would call home for the next week, I opened a text and began an odyssey I would long remember. The chapter heading read: A brief history of scuba instruction in the United States.

If you ever thought the few evenings your entry-level course required were a hassle, think about this: Thirty years or so ago, if you wanted to learn to scuba dive, you pretty much had to join the Navy for a few years. Otherwise, instruction was relatively informal. Your cousin Fred had a tank and regulator purchased from a sporting goods store, and you took it down to the beach to give it a try. If you were lucky, Fred re-

*Cathie Cush is now NAUI diving instructor #9510 and currently teaching her first class. Her article on American divers living in the Caribbean appeared in the summer issue of Diving & Snorkeling.*



# the Course

BY CATHIE CUSH

minded you not to hold your breath.

For the most part, everything worked out well in those early days. But that was the 1950s, and life was simpler. As the decade drew to a close, a group of foresighted Californians realized some sort of organization was going to be necessary if large numbers of people were going to be ducking underwater for extended periods in safety.

The very first instructors didn't have to submit to formal training in order to teach other people how to dive. In the early 1950s, instructors began sending their course outlines to diving columnist Neil Hess. Hess would list the names of those who sent him acceptable programs in his "Instructor's Corner" column.

The Los Angeles County Department of Parks and Recreation developed the first formal scuba training program in 1954. In 1959, the YMCA set up a national program, and the National Association of Underwater Instructors was established. During NAUI's first Instructor Certification Course, a six-day program, 50 of the 72 candidates were certified. The National Association of Scuba Diving Schools (NASDS) and the Professional Association of Diving Instructors (PADI) came on the scene in the '60s, followed by Scuba Schools Inter-

national (SSI) in 1971. Recently the "big five" have been joined by a number of smaller organizations, including MDEA, PDIC and IDEA, forming a veritable alphabet soup of certifying agencies.

More has changed in diving instruction than just the number of educational organizations. The approach to training instructors has changed quite a bit since the good old days when strength and swimming ability were heavily stressed. Diving is easier now than it was 15 years ago—and, many say, so is becoming a dive instructor.

Fortunately, I hadn't spent a lot of time before my training course asking old-timers what their instructor training was like, or I probably would have opted for Marine boot camp.

One instructor later told me he was one of only eight out of a class of almost 40 to pass his YMCA Instructors Institute in 1975.

"At that time it was nine days of pure torture and hell," he recalled. "The pool work was a lot more rigorous than it is today. It seemed like it was more geared toward trying to fail you rather than trying to help you pass. Instead of making sure you were learning they were looking to test you all the time and make you fail."

He later applied for and received PADI instructor certification, then took a NAUI crossover in 1976. That program involved such classic exercises as breathing off a tank without a regulator and gear ditch-and-dons in a murky Pennsylvania quarry. "It was really rewarding to pass," he said. "But I don't ever want to do it again."

Today's instructor candidates will find the emphasis is more on teaching than testing water skills. Most agencies slip watermanship evaluations into leadership courses further down the ladder at the divemaster, dive control specialist or assistant instructor levels. Which is not to say a course director won't slip a few of the trickier water skills into an instructor's program.

"Don't tick him off," the voice of experience would warn when the candidates in our group got too rowdy. "You never know what he'll make you do." I

had visions of leaving all my equipment on the pea-green bottom of Long Island Sound and retrieving it while blindfolded and tied to the anchor. The worst of it was, in reality, the seemingly endless mask, fin and snorkel bail-outs in a crystal clear pool. No—I lied. The worst of it was *wondering* what our course director would ask us to do next.

A lot of the old-timers think the instructor's rating is too easy to earn these days, that the proverbial pendulum has swung too far in the other direction. Instead of turning out gorillas, they criticize, instructor programs are producing partywaits. Or worse yet, they say the agencies are in it for the numbers.

"If an instructor can't handle some confusion, he shouldn't be an instructor. Confusion is going to reign because we're dealing with people," said one veteran instructor in defense of open-water bail-outs and similar exercises.

Still, I thought as I took the plunge carrying my snorkeling gear, I'm not having fun right now. Which is fine, because in half a dozen or more years of diving, there have been some moments that weren't as much fun as others. But would I ask a student to do this?

## The Path to Nirvana

With superhuman powers no longer required, what does it take to become a scuba instructor and just how does one earn the coveted clipboard?

The teaching agencies have each devised a hierarchy through which a would-be instructor must pass. Generally, after open water certification and some experience, a diver can continue training to earn a divemaster, dive control specialist or assistant instructor rating. (The terminology may differ, but entry requirements and responsibilities are fairly consistent from one organization to another.) While it's possible to walk in cold and take a leadership course at some facilities, most dive shops prefer candidates to come up through the ranks. This apprenticeship program has a number of benefits. It gives the candidate more experience than he or she would get in the course of 40 hours or so of instruction. It also



Photo Courtesy of PADI

ensures the shop that next year's instructor crop will teach "their way," without picking up any bad habits. It also guarantees free help for as long as the program holds the would-be instructor's interest. At some point, which may be months or years later, the individual will feel ready to go on for instructor training. Eons may pass, but eventually his mentors will agree that it's time to cut the umbilical.

Another possible path, the college approach, is geared toward those who want to make a career of the dive industry. Several weeks long, these programs cover retailing and other skills in addition to instructor training.

Not having three months free to spend as a student after my long apprenticeship ended, I opted for the week-long instructor training course. My next project was finding one.

My hopes rose as my local dive shop toyed with the idea of holding a training course. They decided against it. Then three or four shops in the area got together and planned a program that would be held over the course of four weekends. "Great!" I thought. "Plenty of time to work on it during the week, and I won't have to take off work." From three states, they could only find two people who wanted to become instructors.

### Have Gear, Will Travel

Eventually I found an ad listing upcoming instructor courses around the country. I broke down and took a week off work, left the safety and security of my own Pennsylvania pool behind and headed toward the wilds of Connecticut one Sunday in May. I was afraid that if I put the inevitable off too much longer, I might lose interest and be forced to take up golf.

In the back of my trusty little rice rocket was every piece of dive equipment I'd accumulated over the previous half-dozen years—dry suits, wet suits, lycra suits, several weight belts, a few tanks, extra hoses, straps and gadgets, enough lights to illuminate most of the mid-Atlantic, and many more things than I would need over the course of the week. Into the spaces that weren't crammed with dive gear, I stuffed milk crates full of files—every piece of paper I'd ever clipped making even the vaguest reference to scuba or the sea—and books and more books, and slides and handouts and all kinds of paraphernalia. I was prepared.

Or so I thought.

In the weeks before the Instructor Training Course (ITC) started, course director Capt. Noel Yoroba (NAUI #3683) had sent a series of letters telling the candidates where we'd need to be and when, and what to bring with us. He

also mentioned several times that once the program began, there would be no time to run errands to find things we forgot to bring. He neglected to mention that during ITC week, eating, sleeping and other daily routines we take for granted would also have to be placed lower than usual on our list of priorities.

Nine faces fell when *The Captain* passed out the syllabus for the week at an orientation and pizza party Sunday evening.

"It doesn't say 'lunch' anywhere," someone observed.

"Or dinner," another added, grabbing for the last slice of pizza.

"But we do have two hours free time for study on Wednesday," a third said hopefully.

Capt. Noel's brow furrowed. "I must have left out a lecture. Oh, yeah, we'll do Oral No. 4 on Wednesday," he smiled.

After giving our first impromptu lectures—introducing ourselves in one minute and forty-five seconds to two minutes—we left the dive shop to get the last good night's sleep of the week.

At 8:30 the next morning we were at a local pool learning how to teach snorkeling. For three hours we snorkeled. And learned snorkeling. And taught snorkeling to each other. And talked about teaching techniques, like how to keep the class's attention when the other half of the pool is full of people in semi-transparent bathing suits performing aquatic aerobics. At the end of the session, we were pretty much exhausted and waterlogged, so we were glad to hear there'd be only one more exercise before we hit the showers.

"I want all of you down here at the deep end holding your equipment, then put it on at the bottom of the pool. Your masks and snorkels should be clear when you come up."

"Well, at least it's not Long Island Sound," I consoled myself as I jumped into the pool. I finished the exercise and came to the surface.

"Good," *The Captain* said. "Do it again."

### Mustering the Troops

Despite what some of the old-timers might say, a week-long ITC can be intense and exhausting. We logged very little actual bottom time, as we spent most of our open-water time practicing tows. But we couldn't have been more completely immersed in diving if we had spent a week in Jules Verne's world.

On the first day, Capt. Noel had suggested we candidates might want to meet for breakfast or lunch occasionally to talk things over. He hadn't have said a word. Almost everywhere we went, we went together. We ate, drank, ate and talked diving 16 hours a day for the

Photos Courtesy of PADI



Students practice doffing gear under the watchful eye of their instructor.

entire week. We quizzed each other, lectured to each other and critiqued each other, offering suggestions and new approaches. We gave each other ideas and shared our favorite lecture anecdotes, "bits" and other resources. At least some of the files I dragged up in the back of the car got put to good use.

We each gave about eight mini-lectures over the course of the week, not to mention little impromptu thrown in just to keep us on our toes. We had three to five minutes to talk about masks, snorkels, squeezes, tides and all kinds of other tidbits. Simple math tells me we couldn't have heard each topic as many times as it seems we did, but we did and it was necessary.

It took the better part of the week for most of us to stop showing how much we knew and actually start teaching. We had to learn not to assume our students would know what snorkels were for, much less stab jackets. It's difficult, when one is feeling one's sea oats, to keep to the basics.

And we heard lectures: How to teach physics, tables, equipment, how to get the really serious physiology points across without scaring the bejesus out of one's awe-struck students unnecessarily. We heard from Capt. Noel as well as from other members of the board. In addition to talks on teaching theory, we heard lectures on physical fitness, women, and the business of diving instruction. Dr. Clyde Swift gave advanced lectures on medical aspects of diving and diving physiology. Walt Hendrick Sr. discussed teaching safety, new theories about the Navy tables and other topics.

Most important of all, we learned the necessity of mustering the kind of enthusiasm we had felt when we came face-to-faceplate with our first fish, when we grabbed our first lobster, when we saw our first giant ray. Even after a week of long days of work, we had to walk into the classroom psyched. We had a responsibility to our students. We had to show them "WOW!"

Then came the good stuff, the "insider" information—Ethics.



Our students would follow us anywhere, Capt. Noel counseled, reminding us of our responsibilities. Some might actually go so far as to follow us home after class and maybe even into our bedrooms.

"Wow!" we responded, considering the implications.

#### To Be or Not To Be

Thursday morning we had some time to study while Capt. Noel held court. While the rest of us sat outside quizzing each other in the spring sun, the captain called us in one by one for "mid-week counseling."

"If you make a dive to 92 feet for 12 minutes in 60-degree water, ascend to

it?" said a third, asking the real question that was on all our minds. At the time, Aloysious (not his real name, as they say in serious investigative journalism) was in the office with the captain.

"Well if he does, I have to," said somebody else, not wholly convinced.

We were really worried. Despite all our self-assured pronouncements that "if we got this far, we're in, man," we really weren't taking anything for granted. We were full-grown adults who had survived the American public school system, had responsible jobs, some of us families of our own, and we were worried about *flunking*.

We weren't the picture of self-confidence you imagine when you recall your instructor. We were not a group convinced people would follow us anywhere, let alone into our bedrooms. We weren't even convinced they would listen to us.

The look on Aloysious' face when he returned told us nothing. One by one we took our turns, but said little about our respective exchanges when they were over. What could we have said? That we'd heard nothing we didn't suspect deep down already? There was still, as they say, room for improvement.

Our mini lectures improved, becoming increasingly more informative and entertaining as the week wore on. The written test was tough, but only half as difficult as we imagined it was going to be. We overstudied and debated some points until we thoroughly confused ourselves. Some of the arguments continued well after the tests were marked. But we all passed.

When we worked with real students in the pool, Capt. Noel made sure they dropped tanks and put regulators on

backwards. For several days we wondered what kind of scheme he would hatch for open-water training. How he ever found a blind guy who just happened to be ready to check out the day we were supposed to help with check-outs, I'll never know. (As it turned out the young man, who was legally but not totally blind, was confident and self-assured in the water. I think the experience put a lot of things into perspective for all of us.)

Sunday morning we gathered in the conference room of a nearby hotel to present our Super Orals—20 minutes on topics of interest to our peers. It would be our chance to shine, Capt. Noel had said. But half the people in the audience were going to be scuba instructors—and the other half already *were*. So what did I have to teach them?

Most of the audience, I found out during the course of the week, dove only in the Caribbean or during the summer, so I settled on dry suit diving for my Super Oral. The number of questions at the end of my talk led me to believe I had made a good choice.

The other candidates were equally successful at finding topics of real interest. We heard lectures on underwater video, decompression computers, archaeology, altitude diving, use of oxygen in accident treatment, pharmaceuticals and diving, and even diving for clams in Long Island Sound. And if I hadn't learned anything else that morning, the scope of lecture topics taught me this: No matter how much one knows about diving, no matter how much one tires of talking about snorkels, the sport always has some new angle to explore, some new facet that can still spark a heartfelt, "Wow!" **\$**

*How he ever found a blind guy to check out, I'll never know. . .*

47 feet, drop your weight belt and go back down for it, what group are you in when you surface?" one candidate asked the group.

"Wet suit or dry suit?" another countered.

"Do you think Aloysious will make

BY MAVIS HILL

# Celebrity Seafood Sampler



**E**ach of our featured diving celebrities lives near the sea in Southern California, and each has had a varied and unusual career in diving. All offered a favorite fish recipe, and each is novel in preparation and flavor. We have a delectable one for turbot, a delightful recipe for fish Veracruz from Mexico, and a very different one for white sea bass.

## LESLIE (TOMMY) THOMPSON

In his photo, Tommy Thompson appears to be a stern disciplinarian. Anyone who has worked or been trained under him will testify that is a correct description of the man. When it comes to diving and safety, they would be absolutely right. But out of the water, Tommy is a sparkly-eyed, good humored friend to everyone. A fascinating conversationalist and speaker, Tommy endears himself to students and co-

*Mavis Hill is the author of The Edible Sea, and a lifelong procurer and preparer of the bounty of the sea.*



Illustration by Dorothy Brittain

workers and is much respected by them.

Thompson enlisted in the U.S. Navy in 1936 after being brought up on a ranch in western Oklahoma. Prior to World War II, Tommy served extensively throughout China and Asia. During his career Tommy attended torpedo school, diving school, submarine school, advanced ordnance school, and special weapons school. During World War II, he served on submarines throughout the South Pacific and in 1942, was awarded the Bronze Star for operations in that area. He also received the Silver Star and Commendation Medals for submarine service. Commissioned in 1943, Tommy was a member of the first submarine crew to journey under the Antarctic ice.

Tommy was also the first U.S. officer to attend the Royal Canadian Clearance Diving School. Throughout his career, he received letters of commendation from numerous naval commanders, the President of the United States, the Peruvian Navy, the Federal Bureau of Investigation, the Long Beach California Police Department, and the Office of Naval Intelligence.

Since his retirement in 1964 as a Lieutenant Commander, Thompson has devoted himself to advancing commercial and sport diving. He was awarded the Conrad Limbaugh Trophy by the Los Angeles Department of Parks and Recreation as having done the most to promote education and safety in the field. He is currently Diving Control Officer

at the University of Southern California.

Easy going, calm of nature, and efficient in all he does, Tommy Thompson is at present lending his talents to the College of Oceanography in Wilmington, Calif. where he holds the position as Manager of Marketing and Sales. He has taken time out to give us his recipe for "Turbot Farcie."

## Turbot Farcie (Stuffed Turbot)

- 2 large turbot fillets
- 1/4 cup butter
- 1 lb. shrimp (cooked, peeled, cleaned, cut into bite-size pieces)
- 1 1/2 cups seasoned bread crumbs
- 2 stalks celery, diced
- 1 small green pepper, diced
- Paprika
- 1 small red pepper, minced
- 1 small onion, diced
- 1 egg, slightly beaten
- Salt and Pepper
- 1/4 cup parsley, finely chopped

Rinse fillets and dry well with paper towels. Grease the bottom of a baking pan large enough to hold the turbot. Sauté the celery, green and red pepper, and onion until tender. Turn the mixture into a large bowl, add the shrimp, bread crumbs and egg, and mix well. If the mixture is too dry (not sticking together) add another beaten egg. Lay one turbot fillet in the pan and dot with butter and sprinkle with lemon juice. Pile the shrimp mixture on. Dot the top with more butter and lemon juice. Lay the



second fillet on top of the shrimp mixture, dot with butter and lemon juice, and sprinkle with paprika. Bake in a preheated oven at 350° for 1 hour. Serves 8.

## SAM MILLER

Sam Miller stands out as truly one of the nicest people I have known, among divers and non-divers alike.

Sam's been around a while; long enough to rack up numerous awards and academic degrees, both in diving and other fields. However, many of these accomplishments were done simultaneously, and at any rate, Sam's destined to be ever young regardless of his age.

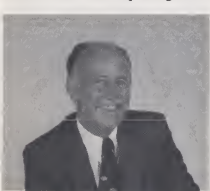
Sam holds scuba instructor licenses from the three largest scuba certification associations in the United States; Los Angeles County, the National Association of Underwater Instructors (NAUI), and the Professional Association of Diving Instructors (PADI). He is also certified as an American Red Cross First Aid and Water Safety Instructor. To date, he probably couldn't be surpassed in the number of sport diving and scuba instructor classes he's taught. For 12 years, Sam taught basic and advanced scuba courses at Orange Coast College in Costa Mesa, Calif.

Sam's also a Doctor of Chiropractic, having graduated from the Los Angeles College of Chiropractic some years ago.

Sam set the spearfishing record for halibut in 1962; was recognized for Outstanding Contributions to Underwater Instruction in 1964; and Outstanding Instructor of the Year 1969. He's also authored many articles for diving magazines and has a vocational teaching credential. His papers, presented at the annual International Conference of Underwater Education (ICUE), have been enjoyed by many. Sam's also an excellent underwater photographer.

Sam's a much sought-after companion for diving trips, not only for his wonderful company, but for his calm expertise in any emergency. He makes one feel safe, just having him around.

When I contacted Sam and asked for his favorite seafood recipe, he grinned



widely and remarked, "Delighted! That would be 'Pescado a la Veracruzana.'"

## Pescado a la Veracruzana

(Fish in the Veracruz Style)

Colorful and tasty, this dish has also been called "Huachinango a la Veracruzana," and frequently "Pargo a la Veracruzana." It may be fried, baked, or broiled, depending on the cook's preference. In 1960, during a trip to Mexico, Sam learned this recipe from Senora Hernandez Torres, wife of the president of the Club De Hombre Rana, who would present this choice dish as the main course. Sam has modified, simplified, and prepared it for his own family and friends for the past 28 years.

### 2 pounds fish fillets

(Traditionally red snapper is used in Mexico. Sam has used a variety of bass, halibut, and California sheephead)

### 1/4 cup oil

Cooking oil or olive oil

### Salt and Flour

### Butter

1/4 stick

### 2 ounces salsa

Use Red Chili Salsa, generally medium hot, or Ortega or La Victoria brands, or your own made from chopped tomatoes, onions, parsley, jalapeno chilies, garlic and fresh cilantro, salt and pepper to taste.

### 1 cup cheese

Sharp cheddar, grated

Salt and flour the fillets and fry in the oil over medium heat 5 minutes until each side is golden brown. Fish should now be half cooked. Transfer fillets to a well buttered baking pan. Cover the fish with the salsa and place in a 350° oven for another 10 minutes. Remove and sprinkle cheese as a topping. Return to oven and broil about 5 minutes or until the cheese melts to a bubbly consistency. Serve hot with refried beans, fried rice, and warm flour tortillas.

## JOHN MAGILAVY

John Magilavy has been diving since he was 12 years old and is a pro in every sense of the word when it comes to the world of scuba diving.

He has skipped diving boats since the days of his work aboard the old Golden Doubloon, and later chartering passengers on his own dive boat around the offshore islands of California and skipping the SCUBAPRO vessel while his own boat was being built. He has also skipped boats for feature films, including the *Poseidon Adventure*, *Raise the Titanic*, and *Jaws 2*.

A certified Los Angeles County Scuba Instructor, John helped establish the Long Beach City College sport diving program which is still in use. He is



presently involved with Cetus Marine Services, Inc. of Costa Mesa, Calif., a firm specializing in high performance, high reliability marine engines.

John also works as a free-lance writer and spends much of his time traveling the backroads which, he notes, lends color to his writing. "I was privileged," says John, "to interview a number of John Steinbeck's relatives and former friends and acquaintances when I was commissioned to write a text for a series of black and white photographs of Monterey and the area where John Steinbeck spent time."

Here John learned to love the people. "The Central Valley of California," he reminisced, "gave me a lifelong love for the Californians who persist in some of those isolated areas. Their perception of the state is unique and hauntingly accurate." John is presently working on his second novel and from time to time writes for *Diving & Snorkeling*.

John Magilavy delights in divers. After diving with them, acting as instructor to many of them, and delivering them to all of Southern California and Mexico's choice diving areas, he finds them "more unabashedly excited about their sport than any other group I know."

John brings us his recipe for white sea bass.

## White Sea Bass and Brown Sugar

White sea bass fillets

2 ounces soy sauce

1/2 cup brown sugar

1 good squeeze of lemon

1 teaspoon Jack Daniels bourbon

In a saucepan, melt the butter into the soy sauce and add the brown sugar.

Squeeze the juice from the lemon into the saucepan and stir well. Add the bourbon. Mix and keep sauce warm.

Dredge the sea bass fillets in a light oil, such as corn oil, and place them on the grill. Ladle the sauce over the top. When fillets are half cooked, flip them over and spread with more sauce. Cook until the fish flakes when probed with a fork. Serve hot.

\$



BY NANCY SEFTON

# Off the Wall!

*For sheer  
exhilaration,  
nothing compares  
to a tropical  
wall dive.*

*Walls are rich sites to observe  
varied marine life.*

**A**sk any diver familiar with tropical waters to name his favorite underwater experience, and inevitably the answer, in awed tones, will be walls.

A flat, rather stark coral island becomes as dramatic as the Grand Canyon as soon as one plunges below its surrounding waters. A sheer vertical face, crowned by a profusion of living corals and decorated with schools of colorful fish, may crest only a stone's throw from shore, in 20 feet or less of water.

Subsea walls attract divers in both the Indo-Pacific and the Caribbean where they are abundant, as well as in colder seas.

In the tropics, there are basically two types of walls, depending upon the structure of their adjacent islands. The tallest, sheerest walls are usually found offshore of flat, coral islands such as the Caymans.

Representing the highest peaks of submerged mountain ranges, such islands are formed when living corals gradually cap the mountain peak. The mountain itself may still be slowly sinking due to movement in the earth's crust, or even the weight of the corals laying down their limestone skeletons and building immense reefs over the centuries.

The corals grow upward as the mountain sinks further into the sea. This upward growth results in the vertical faces.

Volcanic islands are by definition mountainous. Coral reefs growing around them often form walls no less breathtaking or teeming with life, than those of flat islands.

Atolls are doughnut-shaped reefs formed around volcanic ridges long since sunk beneath the sea. Their coral rings grow upward at a pace equal to the island's subsidence and therefore leaving a huge circular reef, perhaps miles in diameter, with no island in evidence. The seaward sides of these atolls can be quite steep.

Vertical walls, no matter where they are found, can begin at depths as shallow as a foot as at Ras Muhammed in the Red Sea. These underwater cliffs may be over 100 feet, or as much as several thousand feet.

Corals grow profusely at the wall's edge, often creating a lip of outward growth. This causes the wall to cut back in places, providing an eerie sensa-



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tion as the diver approaches the edge and gazes down into the blue abyss.

If a scuba diver could go below 200 feet, he would find the living corals gradually disappear, their growth being limited to the upper levels of the wall.

This is because corals have microscopic forms of algae living in their soft tissues. Algae, like land plants, needs sunlight for photosynthesis. Corals cannot seem to survive without their resident algae as it not only provides the host coral with oxygen, but aids in building the limestone skeleton itself. Thus, corals thrive only where sunlight can penetrate.

In the Caribbean, the graceful soft corals, the sea whips, fans and plumes, seem to prefer the wall's edge, where currents bring them ample food in the form of small organisms called plankton. Other filter-feeding animals such as brittle stars, feather worms and sponges are also abundant at the crest of the wall.

Giant deep sea fans, reaching a diameter of six feet, grow outward from the precipice, their lace-like structure branched in a single plane, always at right angles to prevailing currents to filter plankton more efficiently.

Decorating the wall's face, as well as the canyons and tunnels that pierce the wall are the black corals. The myth that these species grow only in the deeps is unfounded.

From a strictly biological viewpoint, there is nothing unusual or mysterious about black coral. The name in fact, includes a number of species, only a few of which are the raw material for jewelry.

The black corals' preferred habitat is based upon competition with other corals for food. Lacking the resident algae found in reef-building corals, the black species take advantage of the scarcity of other corals at darker depths and in shaded, recessed areas. They occupy an ecological niche where there is less competition for food.

Left undisturbed, black coral colonies present a fascinating example of the interaction of the reef community. Each colony is host to a myriad of other marine animals. No black coral formation of any size is without guests. Positioned out over the abyss, these tenants gain a 360-degree exposure to the currents from which they filter nutrients.

Bulbous, scarlet vase sponges may cling precariously to the delicate branches of the colony. Purple tunicates, or sea squirts, attach easily, and graceful brittle stars spread their serpentine arms across the filaments. Tiny fishes hover against the colony for protection.

Most bizarre of the black corals is the species known as spiral wire coral. This single strand coral snakes out from the

wall's face like a long wire, sometimes up to eight feet in length. Its polyps are aligned single file down the strand, their translucent tentacles capturing plankton from this perfect perch in the water column.

Where subsea walls rise to within a few fathoms of the surface, they might be home to light-shy creatures normally found only in deep water. One such animal is the red basket star, rarely seen in the Caribbean above 120 feet. However, on the wall at Little Cayman, with its 20-foot crest, these rare little stars are abundant at only 50 feet, perched on gorgonians growing from a north-facing wall which is almost always in shadow.

Out in the deep blue water, spotted eagle rays glide along the wall's face, gently undulating their wings.

In the Indo-Pacific, almost every island group features wall diving. Destinations such as Palau, the Solomons, and Fiji's Great Astrolabe Reef have numerous sites where vertical faces are festooned with marine life. Pacific walls are

several Caribbean destinations which offer deep dives in research submersibles. The ultimate deep dive is now within reach, for a price, of anyone willing to climb inside a small submersible and be carried into a strange, new world.

Recently I climbed into the chamber of a Perry submersible and sat before the four-foot wide dome port. The captain, crouched behind us, slowly closed the hatch and cool air hissed through valves. I was about to begin the ultimate wall dive.

The sub sank easily to the wall's edge 60 feet below, and suddenly we are over



*A red basket star encircles a gorgonian.*

extremely colorful due largely to the exotic broccoli corals which expand to feed when currents are running.

In the Red Sea, at the southern tip of the Sinai Peninsula, a vertical wall at least 150 feet high crests at one foot below the surface. Shore divers routinely sit on the edge of the wall to tank up. In such locations, even a snorkeler can experience a wall dive.

I have logged hundreds of hours wall diving. Many times I have let my imagination penetrate deeper into the royal blue abyss than I could dare go, conjuring up a world of furtive sea creatures in the darkness.

Today, such dreams can be realized at

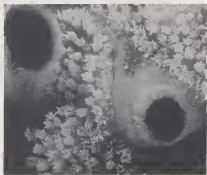
it. Down we glided against the undersea cliff. As we passed through stratified zones, each with its own fauna, the captain turned on the sub's four floodlights to light up the wall's face.

Crouched wide-eyed before the glass dome we stare at a world unseen by sport divers.

The most colorful zone lies between 200 and 400 feet, where sponges, some endemic only to this depth, thrive in hues of red, orange, yellow and purple. Long rope sponges appear twisted in agony; giant barrel sponges look as if they will fall from the sheer precipice at any moment.

Below 400 feet, the vertical wall  
(Please turn to page 56)

*A boring sponge imbedded  
in a coral. Opposite, are  
yellow tube sponges  
photographed off Little  
Cayman.*



# A Rainbow of Sponges

**W**hat is a sponge? Is it Uncle Chester who arrives for Thanksgiving dinner and stays until Christmas? In some cases, but more specifically, it is a fascinating animal noted for its wide variety of sizes, shapes and colors. The sponges of the undersea world are so common they are often passed by unnoticed, or simply ignored by divers.

As a diver descends into the clear, blue ocean waters, the creatures immediately apparent are the fish. They are mobile, colorful and interesting to observe. But a sponge just seems to sit there doing nothing. This is simply not so. From enormous barrel sponges to tiny, colorful encrusting sponges, these living creatures fill an important niche in the reef community.

Sponges, which make up the entire phylum *Porifera*, are the most primitive of the multicellular animals. At first thought to be plants, it became clear that sponges are animals when internal water currents were first observed in 1765. Fossil records show the presence of sponges on earth 650 million years ago, in the Precambrian period. The reefs of today are built by stony corals but many

prehistoric reefs consisted partly of sponges, the stromatoporoids. These sponges had solid skeletons of calcium carbonate. Evidence of their existence can be found in mountain ranges on all continents including the Ural Mountains of the Soviet Union, the Great Dividing Range of Australia and a recent discovery in the mountains of northeast Oregon.

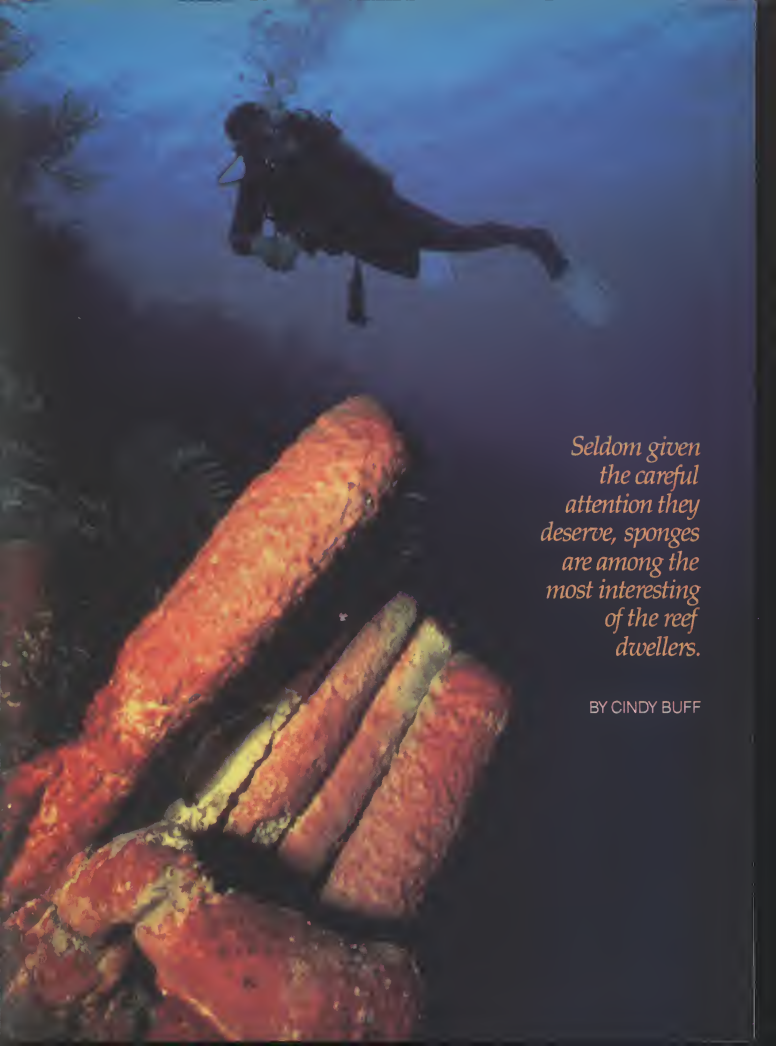
Although sponges no longer contribute significantly to the building process of a coral reef, they are extremely important to the overall reef community. When you see a small sponge in the middle of a coral head, it is usually the boring variety and it is chemically digesting the limestone skeleton of the reef-building corals. Small chips of limestone, expelled into the water, form the fine sediments that fill in the holes in the reef. Even though the boring sponge destroys individual corals, over a very long period of time these sediments are cemented together and help to form the solid base of the coral reef. In the long run, a stronger reef is built which will resist the powerful, destructive forces of storms.

Housekeeping is another important contribution of the sponge. By the nature of its feeding mechanism, it is a very efficient vacuum cleaner of the sea and helps keep the water clear. Tiny particles of food such as bacteria, detritus

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*Cindy Buff is a free-lance writer and photographer residing in New Jersey. This is her first contribution to Diving & Snorkeling.*





*Seldom given  
the careful  
attention they  
deserve, sponges  
are among the  
most interesting  
of the reef  
dwellers.*

BY CINDY BUFF

# Handicap records were made to be broken.

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and plankton are extracted from the water a sponge pumps through its body. The surface of the sponge is perforated by many small openings called ostia or in-current pores (thus, the name Porifera; pore-bearer). Water travels through these pores into the internal cavity, which is called the spongocoel. Millions of collar cells, or choanocytes, line the interior and each has a whiplike flagellum that moves, creating the flow of water through the sponge. Nutrient laden water flows in through the pores; the food is removed and the cleaned water is expelled through the large opening at the top of the sponge, the osculum.

Purple tube sponges are simple sponges consisting on one large interior cavity while more complex varieties have a series of radial canals created by the folding of the body wall. As food is captured by the collar cells, it is either digested immediately or transferred to another cell, called an amoebocyte, for digestion. Since sponges do not have a gut, digestion must take place within the cells. The nutrients are then distributed to other cells.

Not all sponges rely totally on the movement of their own cilia or flagella for water flow. Some use the prevailing currents to force water through their bodies by erecting chimney-like structures into the current. As the water flows across the top of the chimney it creates an updraft which sucks water into the pores. A burrowing sponge can live buried deep in the coral reef while it feeds and respire through its chimney. In over 600 million years of evolution, the sponge has developed highly efficient ways to increase water flow through its feeding chambers.

Sponges have no circulatory system. Gas exchange occurs by diffusion between the incoming water and the cells. The flowing water brings in oxygen and removes wastes. A five-inch tall by ½-inch wide sponge will pump hundreds of gallons of water a day through its body. The flow can be studied by introducing dye into the ingested water and observing the colored water as it exits the body cavity.

Although a sponge's major source of nutrients comes from filter-feeding, this animal also plays host to blue-green algae which provides an additional food source. As the algae carries on photosynthesis, a sugar-like compound, glyceral, is produced as a nutrient for the sponge. The host sponge gains the most benefit from this symbiotic relationship.

Because of this relationship, many sponges have evolved from tubular shapes into dish, cup, fan or encrusting forms. In order to capture the sunlight needed for the algae to photosynthesize, the sponge has spread out. These

sponges use their filter-feeding mechanism only as a supplement and are found in relatively deep waters, 40 feet and below.

The presence of the blue-green algae also influences the color of the sponge. A red pigment masks the green chlorophyll pigments giving many of the sponges a distinct red-brown to purple color. Below 10 feet, the red end of the light spectrum is filtered out by the water so that at 60 feet, a bright red sponge will appear dark brown, almost black to the eye. The light from an underwater strobe captures the brilliant red on film so the underwater photographer must learn what to look for.

Within any one variety of sponge, different shapes and growth patterns can be found depending on the nature and inclination of the substrate it is attached to. The availability of space and the velocity and types of water current are other factors effecting their shape.

If you touch a sponge it does not recoil. Sponges do not have a nervous system. They are really a collection of loosely organized cells. Within the outer walls of the sponge, cells meander through a thickened fluid. These are skeletal cells, digestive cells, algae-holding cells and cells that nurse developing larvae. This mobility is most important for the circulation of food and damaged tissue repair.

Sponges do not have skeletons even though they stand so erect and feel very stiff. They do have a complex system of skeletal material called spicules which comes in a variety of shapes and sizes and are composed of glass-like silica or limestone. Some are straight needles, some multi-pointed stars, others are spirals. Often used for identification purposes, the spicules are all that remain in the fossil records. Before the invention of the cellulose sponge, man used the real animal. Sponge diving was a profession, especially in the Greek Islands. The animals were brought up, dried out and beaten to break down the spicules leaving spongin, the soft part of the sponge we use.

Observing carefully, you will realize many creatures of the coral reef community make sponges their home. Shrimps, crabs, polychaete worms and brittle stars enjoy living and hiding within the interior cavities but can present quite a problem for the sponge by blocking the canals which make up the animal's life support system. The spicules often project into the canals to prevent small visitors from entering. Their spiky skeletal structures also deter predators.

Many sponges are toxic. When the small shell-less mollusks called nudibranchs feed on these sponges, they



Tube sponge photographed off Bonaire.

concentrate the toxins in their own bodies, making themselves toxic to potential predators. Drug companies have focused their studies on the many interesting compounds found in sponges in their search for antibiotics, anti-viral and anti-cancer drugs.

Reproduction in sponges takes place sexually or asexually. Generally, sponges are hermaphroditic; they have both male and female sex cells. When a swimming larva is produced it settles onto a substrate to grow into an adult. In asexual reproduction, buds form that break off and grow into new adults. Even sponge fragments will attach to a substrate and grow. Ancient Greek sponge divers cut sponges up and tied the pieces to rocks to increase their numbers.

These fascinating animals are found in every ocean but I have encountered the greatest variety of shapes and colors in the Cayman Islands, southwest of Cuba. In shades of red, orange, purple, green, brown, yellow and iridescent, these sponges are incredibly beautiful subjects for underwater photography or just to observe. The next time you see a sponge think about what is going on inside, and how long these creatures have existed on earth. They are fascinating animals so don't just swim by—stop and enjoy.

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# The Coral Reefs



**T**housands of years ago, Ice Age glaciers were advancing into what is now the United States. As much of the world's water supply was locked up in ice, the land mass extended much farther than it does today. That early shoreline is now 30 to 40 miles offshore in up to 100 feet of water. Where waves once broke on rocky shores, five to ten thousand years ago, tropical fish and giant lobsters now hide off the coast of North Carolina.

Starting at water depths of 60 feet,

*William Mansfield is a former research biologist with the University of North Carolina at Wilmington and a 23-year veteran of diving.*

rock ledges that were once Pleistocene shorelines can be traced for over 20 miles, some having more than 20 feet of vertical relief. These ancient shorelines are now home to more than a dozen species of colorful, tropical fish, at least four species of hard corals, and several varieties of large sea fans. All of these warm water creatures are kept reasonably comfortable due to the close proximity of the Gulf Stream, which approaches within 60 miles of the southeastern North Carolina coast. Most of the best ledges, unfortunately are 30 to 40 miles offshore.

Access to these tropical environments is not easy for the handful of divers who are addicted to them. Trips begin at day-



*Diver glides over a ledge at 100 feet. Nurse shark rests beneath a ledge at 23-mile rock.*

break and end at sunset, with two dives possibly as deep as 100 feet sandwiched between boat rides of one to two hours in each direction. The dive tables are cruel at these depths, so necessity dictates that only about an hour of the entire day is actually spent diving.

Divers with a wide variety of interests

# of North Carolina

*Offshore  
ledges, created  
during the Ice Age,  
attract corals,  
tropical fish and  
divers to these  
southern waters.*

are attracted to these offshore reefs. With visibility commonly over 60 feet, and sometimes over 100 feet, tropical fish collectors can choose among colorful species including blue angels, at least four species of damselfish, wrasses, tangs, and blue chromis. Shell collectors find deer cowries, helmet shells, spiny oysters, lion paws, or an occasional rare queen conch, trumpet triton, or possibly a junonia. If you have a taste for seafood, grouper and lobsters are plentiful. It is not uncommon to pass up three-pound lobsters, hoping they will eventually reach a more appealing weight.

Most importantly, the ledges offer the opportunity to photograph a tropical marine environment without traveling to the Caribbean, providing one is willing to accept the limitations of time and light at these depths.

The 23 Mile Rock is a particularly picturesque spot on a ledge that extends for more than 10 miles. The inshore edge of this ledge can be found as close as 16 miles from the beach, and runs roughly perpendicular to the shoreline. This particular spot is, as its name implies, exactly 23 miles from Wrightsville Beach. The top of the "23" is at 90 feet, with a sheer rock cliff dropping to the sand at 110 feet. Thousands of years ago, wave action undercut the rock and huge pieces were broken off and are now scattered at the base of the ledge. These rocks ranging in size from that of a car to as big as a house, form crevices and tunnels providing a haven for slipper lobsters (also known as Spanish lobsters), grouper, and tropical fish. With sea fans reaching as high as three feet, the prolific coral and sponge growth produce spectacular colors not present on any other ledges in this area. Adult blue angels are the dominant tropical fish, with several species of damselfish defending every coral head. An occasional moray eel can be seen lurking near the base of the ledge, while cowrie

and helmet shells hide out of sight in the cracks. In spite of the depth of this dive, it is surprisingly easy in terms of required diving skills. With visibility usually in excess of 60 feet, underwater navigation is not normally required, unless you choose to leave the ledge area. It could even be termed a "mini wall dive."

On the best day I've experienced, you could see the boat hull from the end of a 150-foot anchor rope. Although a rather strong surface current is often present, there is almost never a current on the bottom. Novice divers usually do well here.

If you want to collect tropical fish, take along a net and some sort of minnow bucket with a sealable top. Hang a 30-foot rope with a weight and clip over the side of the boat, and hang your fish bucket on it for a half hour or so to decompress the fish. In general, tropicals seem to survive a slow ascent from 60 feet or less, but at this depth, you need to give them a decom stop. The "23" is the class act of North Carolina ledge diving.

The Shark-Tooth ledge is found 18 miles off Carolina Beach in 90 feet of water, with a north/south orientation. Curving slowly eastward and turning offshore in an easterly direction for over 20 miles, there are high spots on this ledge that are close to 12 feet, and low spots where the rocks practically disappear into the sand. The relief is not as great here as it is on the "23," but it is called Shark-

Tooth for a very valid reason. On my very first dive there over 12 years ago, I found a fossilized shark tooth almost six inches long. There have been several more found over the years, all nearly as large as the first. Lastly, if you want to wind up your dive weekend with a nice seafood dinner, there are stretches of this ledge that are virtually infested with slipper lobsters. The diving conditions are virtually identical to the 23 Mile Rock, only the magnitude is scaled down a bit, and it is not as deep.

Located 34 miles offshore, the Lobster Ledge is actually the first Continental Shelf break commonly called the "20 fathom curve" on most navigation charts. This ledge parallels the coast, and is mostly broken up with high spots attaining only 10 or 12 feet off the bottom. The great amount of rubble, plus the closeness of the Gulf Stream, combine to create ideal conditions for spiny lobsters to grow to huge sizes. Last year alone, over 15 lobsters in the 8- to 12-pound class were invited home to dinner. This location is also littered with delicate spiny oysters for the diver able to spot them.

Conditions are a little different here than on the other ledges. The face of the ledge is broken with rocks strewn over a gradual slope instead of a sharp vertical face. Navigational skills are a must, because you can easily get away from the anchor rope if it is not right on top of the ledge. Again, current is rarely a factor on the bottom, but is prepared for it on top because you are very close to the Gulf Stream.

Most ledge divers prefer to visit the area of *Frying Pan Shoals*, because at 60 feet, it is considerably shallower than any of the other offshore ledges. This one is easy to find due to a permanent light tower located directly on the shoals. The Tower is 42 miles from Wrightsville Beach, and is visible for over 10 miles. The Gulf Stream some-





Sizing each other up . . . Above, a flame scallop displays its mantle.

times approaches within 10 miles of these shoals, pushing visibility to over 100 feet with 80-degree water. The opposite side of this coin is the possibility of the Cape Fear River reducing visibility to less than 30 feet. This is dependent on wind direction. All of the marine life mentioned is present here, but the 42-mile boat ride from Wrightsville Beach is a deterrent, and good visibility is uncertain. Be prepared for a stiff current and a few sharks, but this could be the best dive you have in North Carolina.

There are several 2- to 3-foot ledges three to four miles offshore that are only 50 to 60 feet deep. In summer, these are visited by grouper and tropical fish, and can be lots of fun for the less experienced divers. Visibility is rarely over 20 feet, but it is a very easy dive, and gives a good idea of what is available farther offshore.

Weather permitting, all of the sites mentioned can be dived with a wet suit all year. The best months are June through September, when a wet suit isn't absolutely necessary. Wind and weather become a problem during the

## The Gulf Stream sometimes approaches within 10 miles and visibility is over 100 feet.

winter months, but as the lobsters and tropical fish are immune to these problems, divers often sneak out in January. Water temperature on the bottom of the offshore ledges drops into the low 60's during the coldest part of the year.

Two full-service dive stores serve the area and can assist with charters and rentals. Undersea Sales at Wrightsville Beach, N.C., (919) 256-3057, and Wilmington Scuba, (919) 762-7078 in Wilmington, N.C., are both equipped to get you to most of the sites mentioned. Coastal Foto has two locations, (919)

392-0730 in Wilmington, and (919) 256-9066 at the beach. They can process E-6 or prints overnight.

Several dive charter boats make regular runs to most of the sites mentioned. The average cost per person based on a 6-person charter is as follows: three miles offshore - \$25, six miles - \$35, 12 miles - \$45, 18 miles - \$50, 23 miles - \$55 to \$65. Trips farther than that can be negotiated with some of the larger boats. Captain Brad Barbee of the *Fania Sea* (32' Wellcraft) can be reached at (919) 395-5841. Captain George Nixon of the *Wreck Hunter II* is at (919) 686-9340. *Wet and Wild*, and *Whipsaw* both run charters out of Undersea Sales, and can be reached there.

If you make it to North Carolina, be sure to visit the N.C. Aquarium at Fort Fisher, 20 miles south of Wilmington. Here you will find numerous marine related exhibits, including a 20,000 gallon shark tank and a new N.C. Reef exhibit that is scheduled to open this summer. There are adult, as well as children's, educational programs daily at the Aquarium, which serves as a public information center for marine education, (919) 458-8257.

You have to be dedicated to accept the challenge of ledge diving year after year. We occasionally have to turn back if sea conditions are not compatible with the small boats we use even though all are equipped with VHF radio, LORAN, depth recorder, EPIRB, and safety equipment. But it's still only a hobby, and if the conditions are wrong, or we don't feel up to it, there's always a ballgame to watch or grass to cut at home.

S



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BY KARL SHREEVES

Illustrations by Anita Schettino

*Fate seldom  
deals a cruel hand  
to the deserving, but  
when she does...*



# Making the Worst

**H**ey Pat, guess what I found at about 95 off Dam Point?" I said, striding into Patrick O'Grady's commercial dive shop overlooking Lake Longfellow Reservoir.

O'Grady stopped rummaging through one of the half-dozen valuable equipment heaps decorating his business. "That'd be the old Carson houseboat," he said after scratching his salt'n'pepper shadow an appropriate interval.

"No, it was a barge."

"Now Karl, how long've I been divin' this reservoir?"

"Pat, everyone knows you were standing on the



Karl Shreeves is on the staff at PADI. This is his first contribution to Diving & Snorkeling.

lake bottom in full gear waitin' for the water level to rise when they built it 25 years ago."

"Well then, if I say that's the Carson houseboat, don't ya' think I might know something about it?"

"Then how come it's a barge? Looks like a giant corn bread pan, nothing at all like a houseboat."

"You might say there's a little story behind that," Pat said.

I glanced at my watch. When Patrick O'Grady says there's a "little story," either get the hell out or get ready to sit a spell. Grabbing a warm Bud from O'Grady's poorly concealed, un-iced cooler, I slid my Levi's into a frayed lawn chair, loosened my belt, and propped my feet on a derelict cable spool.

"Oh really?" I primed, now that I was comfortable.

"Yeah, it's the story of Milton Carson. His father was Leonard Carson of the Carson Grocery chain. Back in 1973 or '74 Milton managed to wreck his houseboat off Dam Point. Rather embarrassing, I imagine," O'Grady said, looking out the window onto the lake.

"What happened?"

"To understand, you've got to understand three important Lake Longfellow commercial diving rules."

"Number one, you've got to be an experienced diver. Deep in Longfellow is no place for an unseasoned diver. Number two, you've got to be trained in commercial diving—especially when raising

Milton's favorite part, by my guess—king-size master bed and queen size in the guest quarters. Two inboard engines, either which could push an aircraft carrier, completed the ultimate in boat luxury.

"Only problem was, Milton was born the worst sailor to ever step off a dock. As a kid he couldn't keep his toy boats afloat and got seasick watching a grandfather clock pendulum. The fact was Milton knew nothing about boats.

"Milton liked girls, however, and he knew something about them. Big, expensive toys like Regal houseboats excite lots of ladies, and they'd flock with Milton to Savalas Peak Marina where he moored the Regal for sun-and-fun weekends.

"Finally one lass asks Milton to do something different and exciting. She wants him to take the Regal for a cruise.

"He gets kinda worried because he's never been out of the marina, let alone out on the lake. But swayed by hips which could shut down the Senate, Milton casts off.

"Of course he forgets the power cable, ripping it clean off so the free end splashes into the water. A school o' shad minnows surfaces belly up and the entire dock's power blacks out, but no one notices because everyone's watching Milton throttle backward into an anchored out Star Craft ski boat.

"It's a minor collision for the Regal, but the Star Craft's cracked down the starboard hull, a fact unnoticed until the following day when it's missing at

# of a Bad Situation

houseboats. The reservoir doesn't give up her treasures like a chicken givin' eggs. Number three, you've got to respect the water and nature's rules. Never forget, Mother Nature always gets the last laugh."

"So Milton Carson broke a rule raising a houseboat?"

"Not a rule. He broke all the rules.

"It was Milton's birthday, and since he already had a Porsche, Winnebago, and a Rolex, Daddy Carson bought him about the only thing on God's earth he didn't have, namely an 80-foot, \$150,000 Regal Lake Cruiser, equipped with anything anyone ever thought to put on a houseboat.

"It had wall-to-wall carpet, kept clean by a central vacuum system operated by the weekly maid service, the best stereo system, a complete bar—

daybreak. But that's another story.

"Anyway, Milton roars his 80-foot monster into the main lake, his wash tearing loose the 'No Wake' Buoy, which drifts into Longfellow's most traveled channel where it jammed traffic for two days. Now Milton's luck sours.

"Up on the fly bridge, his honey hanging from his white yacht jacket, he futilely tries to decipher passing navigation markers. Problem is, Milton's navigational experience is limited to his Porsche, in which he's constantly cutting U-turns.

"Not knowing the 'rules of the road,' he closes to shore where there's less traffic, but more navigation markers. Not reading these proves real expensive.

"Cruising along shore, Milton brushes a marker. The marker's got a bunch of red symbols he doesn't recognize, but at least he's in water away from all

(Please turn to page 74)

# Diving Oasis in a Troubled Sea



**I**s the Med really dead?

At a recent international congress on environmental protection, the degree of pollution was shown to be so high that bathing can be a health risk in many areas. Along complete coastal stretches, fish stocks were seen to be still diminishing, while the underwater world, previously full of animal and plant life, is now bare and deserted. The price of a kilo of fish is rising above that of best quality meat.

In principle, everyone is at fault—industry, the state, fishermen, even tourists. For commercial reasons, efforts are

underway at coastal resorts to bring the situation under control. The success rate, however, is slow, as the ability of nature to regenerate itself has been weakened. As a result, tourists now bathe in swimming pools instead of the blue sea.

That it would not take very much to protect and sustain the sea and coastal regions is shown by the example of the recently established nature reserve at Port-Cros to the east of Marseille, France.

Port-Cros belongs to the Iles d'Hyères as do the neighboring islands of Porquerolles and Levant, which had once been famous as a nudists' paradise. Port-Cros covers an area of 700 hectares sited 15 kilometers off the mainland. The island is typically Mediterranean with pine woods, oak and cherry trees flourishing with several exotic plant species. Land animals include tortoises, snakes, and several rare species of birds of prey.

But the real miracle starts below the surface of the water. Here the snorkeler or scuba diver finds abundant marine life. In the shallows, which are usually

extremely clear, sea graylings, crabs, and other primitive animals are found. The reefs are full of sea urchins and swallowtail fishes, and sea grass beds are expanding. Caves and overhangs are covered with sponges and thick corals in all shapes and colors. In certain places, schools of very rare Mediterranean serrated grouper can be seen.

Such an unspoiled world does not exist without supervision and maintenance. At the nature reserve of Port-Cros, 20 people work during the high season from Easter until November. Film shows, seminars, and guided tours above and below water turn a stay on the island into a special kind of experience. Apart from the harbor master and the staff in the information center, the reserve officers are the most important people. They work above and below water with police authority and can prosecute on the spot. A spearfisherman caught with a serrated grouper was fined FF 5,000 (U.S. \$1,000) last year, which he had to pay despite the pleading of his attorney.

"The diving is very beautiful here," explains a fisherman whose boat we had





The harbor at Port-Cros Island.



*A small island off the coast of France is setting an example of how the Mediterranean can be saved.*

BY KURT AMSLER

hired for our diving trip. He was over 80 and said proudly that he had always lived on Port-Cros. As a rule, it is the fishermen who know the sea near the coast best. Although they never dive, they know from experience where the fish are to be found, where old wrecks are lying, or dangerous currents threaten.

On the September morning we dive,

the sea is slightly choppy. It is a relief to jump into the water. In a surge of silver air bubbles we glide toward the rock plateau 15 meters below us. The water is very clear and deep blue. A slight current makes a sea grass bed we gather

*Kurt Amsler is an award-winning Swiss writer, photographer and filmmaker. He is also the author of Enchanting World of the Seas.*



*Spiny lobster*

near sway to and fro as if in a breeze. After buddy checks we let ourselves drop over the edge of the reef into the depth. The view is fantastic.

Generally, life in the Mediterranean has withdrawn to the depths and hardly anything can be found above 40 meters. But the rock wall which falls steeply into the depths is covered with red corals. Man-tall coral fans, hundreds of them, create a real forest. And this is at a depth of 25 meters! Looking up, I see a shoal of golden fish silhouetted above the reef. Beams of light penetrating to this depth break a hundredfold on the fishes' bodies.

At 30 meters, a precipice opens. My buddy signals with excitement. Swimming closer we see at least six spiny lobsters, each at least a foot long, sitting together in a cave. The light of the camera's flash reveals the gorgeous colors of these crustaceans. We pass the 40-meter limit with our bottom time running out. At this depth, the twilight is a diffuse blue dusk. In the gaps, we switch on underwater lamps. We see precious red corals as thick as thumbs gleam, and we discover a spotted dogfish. Spotted dogfish are typical of the Mediterranean. Their eggs are laid on coral formations. However, we had not expected to discover a fully grown specimen.

Time is pressing, so we start our ascent. At 20 meters, there is yet another surprise. On a rock ledge, six beautiful serrated perches are sunning themselves. The last time we saw anything like it in the Mediterranean was 15 years



*Spotted dogfish*

ago. I wanted to watch these animals longer, but our ascent had to be maintained.

The prescribed ascent times to 6 and 3 meters are spent enticing a cuttlefish out of its cave. Normally these animals can be tamed by stroking them gently. This large specimen, however, does not seem to feel like it today and takes to its heels, expelling a cloud of ink. After exactly 50 minutes we break through the water surface and are taken aboard by our fisherman, who has followed the air bubbles. We are enriched by this experience, now so rare in the Mediterranean.

Port Cros is recommended to all nature-lovers, snorkelers and divers. Two boats visit the island daily, departing from Le Lavandou on the mainland in the morning and returning in the evening. The return fare is FF 43 (about U.S. \$7). Those who want to spend a longer

time on the island have to pay quite a bit more. The only accommodations are at a rustic four-star hotel which is very expensive. Camping is prohibited. Apart from two restaurants, which serve excellent food, there is nothing else.

Boat owners can anchor overnight in the harbor. The harbormaster has to be notified on arrival and a small fee must be paid. I recommend divers stay in Le Lavandou and travel by inflatable to the island. The distance is 15 kilometers and you can sail by sight. The information center of the nature reserve is happy to supply details concerning the best diving sites.

Organized trips for several days or simply day trips to the island are offered by the CIP Club International de Plongée in Le Lavandou. The address is Lou Pescadou sur le Port, F-83980 Le Lavandou, France.

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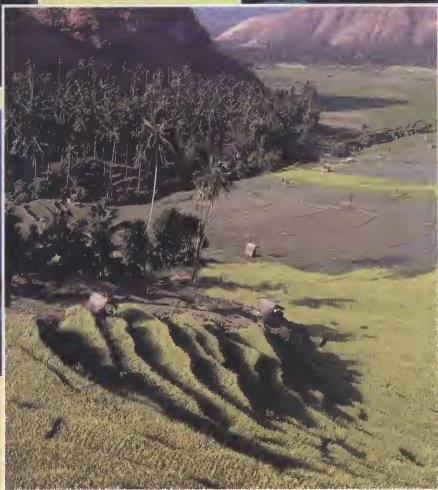
TOTAL





BY TIM ROCK

*Located off  
the coast of Java  
in Indonesia,  
this exotic  
island has only  
recently attracted  
divers.*



# Breathtaking **Bali**





**B**ali is an Indonesian island of traditional dances, spirit worship, and breathtaking scenery. Long hailed as a haven for the adventurer, the undersea world of this exotic isle just to the east of Java was opened to divers only in this decade.

Bordered by the Flores Sea on the north and the Savu Sea to

the south, Bali is situated in one of the richest ocean areas of the world. This marine habitat supports an immense variety of fish and invertebrates with many new animals still being discovered while others wait to be identified and classified by scientists.

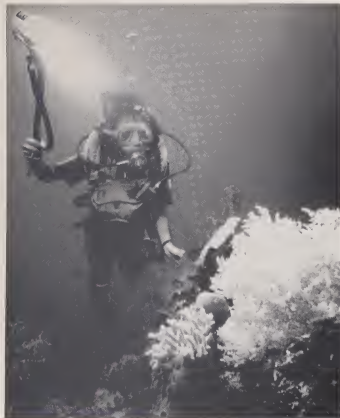
Bali is not a small island and the impact of more than three million people on its reefs has taken its toll in some areas. Huge rivers, swelled by monsoons in the spring, also empty a heavy silt load. But, Bali's unique ter-

rain has also prevented people from populating some parts of the island. The farsighted Balinese have set aside the island of Pulau Menjangan in the northwest as part of the Bali Barat Wildlife Reserve that also encompasses thousands of adjoining acres on the mainland.

The best dive sites on Bali are located in these remote parts of the island and drives to reach them through the villages and countryside are as much an adventure as the diving itself.

A free-lance photojournalist based in Guam, Tim Rock specializes in the Western Pacific area. His company, RVM, produces still and video material focusing on marine life of the Pacific.





*Diver lights soft corals at the Menjangan Reserve. Below is the entrance to one of many Hindu temples on Bali.*



During the week I visited Bali, I was based at the Gloria Maris Club located in Kuta in southern Bali. It is the largest operation on the island, NAUI sanctioned, and has had a reputation for good service and diving with visiting Australian divers for the six years it has been in business. There are other dive facilities in the Sanur area, but they are not particularly consistent, sometimes operating through hotels only during the high season. Gloria Maris has a resort in Padans Bali, as well as a central facility in Kuta and is open year-round. Gloria Maris promised and delivered hassle-free dependability.

Tulamben Drop-Off is located on the southeast shore of the Badung Strait. To get there, an early morning departure gets you out of the city before it becomes too congested and into the rural countryside. People rise early in Bali, around 5 a.m., so villages are a flurry of activity by 7 a.m. Everything happens out on the street. There are women carrying morning water atop their heads in large vessels or balancing a mountain of produce in the same precarious way. Children on bicycles head off to school in uniform white shirts. Men can be seen in the rice fields weeding the crop.

The terrain winds through the mountains and heads toward the eastern coastline. It becomes increasingly rural. A sign at one beach warns that nude bathing is not allowed. White spray mists the horizon as the waves that have

made Bali a surfer's haven break in strong curls.

The volcanic shape of Mount Agung rises in the distance as our bemo, a nine passenger van, winds through another series of hills. As we drew near to Tulamben Drop-Off, we remarked on the beauty of the flowing rice terrace that sloped into the valley leading to the bay.

Once in the valley, the land became an arid wasteland. Towering pamadamas trees with windblown tops were spaced like telephone poles across the landscape. The road again skirted the coastline, passing a dusty fishing village of thatch-roofed houses. The bemo pulled to a stop and Simon, our guide, announced that this was the place. Children appeared out of nowhere to carry tanks and equipment down a dry riverbed to a black sand beach.

We passed a row of multicolored out-

riggers and a salt-making operation consisting of hollowed coconut tree trunks filled with seawater baking in the sun. A tarp was laid out on the beach and we donned our gear.

The water of the bay was like glass and after only a couple of kicks, we began descending a gradual slope and swimming around a rocky point. It was then I knew we were to experience excellent diving. Clouds of chromis and fluorescent basslets glittered on the reef. A large gorgonian fan swayed gently and huge tube and barrel sponges came into view. The variety of colors was highlighted by the dark, volcanic sand.

For those familiar with diving in Micronesia, the terrain resembled the outer reef slopes of the Rock Islands of Palau. Large, multihued crinoids clung to rocks and sea fans fed on plentiful nutrients. Schooling yellowtail were common and curious. At one point, I settled down to photograph a diverse population of shrimp at a clearing station. Within a couple of minutes, I was surrounded by curious snapper circling within a foot of my mask.

Large grouper and batfish were also prevalent, as were an infinite variety of invertebrates. Carpet anemones boasted colorful clown anemone fish and Peterson shrimp. No one in our group saw any pelagic animals such as turtles or sharks, but the dive was never deeper than 60 feet making such sightings unlikely. It is possible to see open-ocean animals in deeper water.

We came ashore at the base of a small temple standing watch over the bay. With a majestic volcano looming in the distance, it added to the exotic nature of diving in Bali. A seaside box lunch was followed by another dive in the same vicinity.

During the week, we also stayed at a northern beach and did some early morning snorkeling. The beaches in the Lovina area are littered with colorful junkies, which are outrigger canoes with elegant, triangular sails. Arrangements can be made to go out after sunrise on one of these boats to snorkel. The water is usually calm and clear and the colors dancing off the water makes for a serene way to start the day.

Perhaps the best dive on Bali (and one of the best I have ever experienced) is at Menjangan Island. It's a 3½-hour drive from Kuta through hills, villages and along a scenic seacoast. Java is clearly visible from Teluk Terima where you board a spacious boat for the trip to the island.

Menjangan is off Bali's northwest tip and is an extension of a massive national park that includes a good portion of western Bali. It was declared a nature reserve by the World Wildlife Authority. This uninhabited isle has white sand

(Please turn to page 73)

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BY MARTY SNYDERMAN

# Midnight Madness

*Adventurous  
California divers  
can witness a  
phenomenon of  
nature rarely seen.*

*At times, several  
males will attempt  
to mate with a single  
female squid.*

To Southern California divers the lure of the Channel Islands is swimming through forests of giant kelp and exploring the crevices and ledges of the rocky reefs. Besides the natural beauty of the golden kelp forests, over 800 species of marine animals can be found in the kelp beds and in the rocky reef community beneath the kelp including garibaldi, moray eels, California spiny lobster, abalone, sea lions, and literally hundreds of other creatures.

Logic dictates that as soon as a boat anchors most divers descend directly into the kelp or locate a rocky reef to examine. If by chance, anyone finds themselves over a sandy bottom, they curse their luck, take a new compass course and hurriedly swim off to the nearest stand of kelp.

But there are some exceptions to this pattern and I'm one of them. I love to explore the sand. I also like to dive the kelp and the rocks, but unlike so many other divers I often plan dives to intentionally examine the sand community. Luckily, there are great expanses of sandy bottom between the rocky reefs. Some of these plains are only a few yards wide, while others extend for

hundreds of square miles under the coastal waters of the Pacific. These areas are also visited by halibut chasers, and the occasional "lost" photographer, but most divers would swear no one in their right mind would spend time staring at sand, especially if a kelp forest or a reef is nearby.

So why do I dive the sand? My mother would say it's because if the world goes one way, her son heads off in exactly the opposite direction. But in truth, I enjoy diving the sand because it is different, and the differences are absolutely fascinating.

At first glance, sandy plains can appear to be rather barren and devoid of life. It would seem to make perfect sense to swim over the sand as fast as one can to get to the good stuff. But in many ways, the sandy plains of the ocean floor bear a strong resemblance to deserts on land. During the day, the sand often appears barren and boring, but at night, the same area can be alive with a variety of fish, octopi, crabs, clams, squid, sea pens, sea pansies, starfish, tube anemones, angel sharks, cusk eels, bat rays, thornback rays, guitarfish, and many more creatures.

Of course, not all sand dwelling species will be seen on every dive; that's why it's called exploring. Diving the sand is usually a "feast or famine" situation. But when you hit, it's a wonderful place to be.

Of all the phenomena that occur in the sand, squid spawning is perhaps the most fascinating. Common or market squid (*Loligo opalescens*), are normally found over deep bottoms miles out in the open sea. But these squid mate and lay their eggs in much shallower surroundings. During heavy "runs" which can last for several weeks, literally

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National Geographic, Oceans and Harper's Bazaar are just a few of the magazines which have published free-lance photojournalist and cinematographer Marty Snyderman's work. He has also worked on many underwater film crews.



Female squid prepares to place egg case in sand. Each case contains approximately 200 eggs.

millions of squid gather to mate over the sandy bottoms in coastal canyons and along steep sand drop-offs at the offshore islands. The presence of millions of mating squid with their egg casings attracts predators and scavengers to a feast of squid and their eggs. The scene is as spectacular as any marine phenomenon a diver can witness in the waters of Southern California.

When the squid spawn in depths accessible to sport divers, it is generally during the middle of winter. But that is not always the case as heavy spawning has been documented in August in the La Jolla Submarine Canyon off San Diego. The heaviest and most predictable runs tend to occur at the California Channel Islands. The entire weather side of the islands and famous drop-offs near West End at Catalina Island are well documented as favored spawning grounds for squid. Pyramid Head at San Clemente and several sites at Santa Barbara Island are also well known by commercial squid fishermen who can legally take up to 10 tons of squid per day.

As market squid reach a maximum size of about 12 inches in length, their numbers must be vast for a commercial fisherman to net 10 tons in an evening of fishing. During heavy runs, the mass of squid can be so dense that it is impossible to see through them.

Squid are included in the phylum known as mollusks which is such a large grouping of animals that characterizing them proves difficult. The phylum of mollusks includes such diverse species as abalone, nudibranchs, octopi, scallops, sea hares, mussels, clams, oysters, snails, and isopods. In general, the common unifying features of mollusks are unsegmented bodies, and well-developed sensory organs which are concentrated toward or in the head. Most, but certainly not all, have a hard external shell, and many have a large muscu-

lar organ called a foot which is used for locomotion, anchorage, and securing food.

The most highly evolved class of mollusks are the cephalopods (head-foot animals), which includes squid and octopi. These animals are characterized by their sucker-lined tentacles, advanced sensory organs, and a reduced or completely lacking external shell. The body of common squid is usually colored an off-white, but as is the case with other cephalopods, these clever creatures can, as they pulsate, rapidly change their coloration from iridescent hues of yellow and gold, to burgundy, and brown. Squid are capable of swimming forward, backward, and sideways with equal rapidity, propelling themselves with a directable siphon and their undulating tail fins. Squid have well developed eyes and as a result are highly sought after for study in many research projects.

Common squid are believed to live for only about one year. In order for the species to survive, the squid must hatch, survive to reach sexual maturity, and reproduce all within the time frame of a single year. It is believed that even if the squid do not have the opportunity to mate during the first year of their lives, the animals will not survive another year. It is easy to understand that when the spawning runs occur, the squid are driven by an indomitable urge to mate successfully. The squid search frantically for partners, and pay little attention to the presence of outsiders, whether predators or diving photographers.

During heavy runs, when spawning is intense, mating squid can be found hovering just above the egg casings along the bottom, in mid-water, and near the surface. The actual act of mating occurs most often at night. When mating, the squid change colors within fractions of a second pulsating from color to color.

The squid are often attracted to the deck lights of boats and to dive lights, and at times will gather in numbers sufficient to totally obscure the light from even the most powerful dive light. The squid swim into the lights and constantly bump into divers as they seek partners in their quest to fulfill their destiny. As bizarre, or kinky, as it might sound, while it only takes two squid to successfully reproduce, the males are so obsessed with desire that often two or even three males attempt to simultaneously mate with a female.

After successful fertilization, the females proceed to lay their eggs. The eggs are laid inside 6- to 10-inch long, white egg casings which are firmly attached to the sandy bottom. Each egg case contains close to 200 squid, on the

average, but it is estimated that only one will survive to adulthood as the hatchlings are heavily preyed upon by a variety of fishes, crustaceans, and marine mammals.

In many places, the egg casings are so thick you literally cannot see the bottom. The once light brown sandy substrate takes on the appearance of a luxurious, creamy, white shag carpet for as far as the eye can see. In five to seven days, the bright red eyes of the yet to be hatched squid are visible when the egg casing is held in front of a light source. In another week or so the eggs will hatch, and the newborns will instinctively head for deep water.

After mating, the adult squid deteriorate rather quickly, making themselves an easy prey. The kaleidoscope of pulsating colors that were so captivating prior to mating no longer occur. Instead, the squid take on an off-white color, their tentacles become grossly disfigured, and they soon die and pile up on the sandy bottom.

While the antics of the squid make the diving unforgettable, the squid do not provide the only excitement. The presence of the squid attracts an array of predators and scavengers. Horn sharks and angel sharks eat so many squid they simply cannot force down another bite. These predators rest on the bottom with partially eaten squid dangling from their mouths, as if immobilized by their glutony. Rockfish, black and white seabass often join the feast. Lobsters and crabs leave the protective crevices of the reef to forage on both the dying adults and the eggs. But even with all this activity, the squid die off so fast that in places they are stacked in piles up to two feet high.

High up in the water column the squid feast continues for bat rays, sea lions, pilot whales, and blue sharks. Bat rays are usually wary animals and although divers often see them, getting close enough to take a quality photograph can prove tricky. However, when stuffed with squid the rays tend to alter their normally cautious nature and appear mesmerized by dive lights. At times, the rays constantly bump into hand-held lights, and then swim away for a few moments only to return again and swim straight into the light.

Blue sharks rarely come so close to shore, but when a natural food source presents itself, these pelagic sharks readily come into shallow water to feed. At times the blue sharks are present in such large numbers that everywhere you look, a blue will be seen swimming, mouth agape, through the squid.

It is fascinating to observe the blue sharks as they feed on the thick concentrations of squid. The squid are easy targets and the sharks eat and eat until

(Please turn to page 77)



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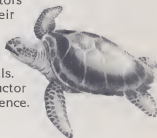
## **\*Synergism:**

The co-operative action of separate entities such that the total effect is greater than the sum of the effects taken independently.

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# SCUBAPRO

## Trivia Quiz



Photo by Cindy Bull

### Try to Remember

**H**ow long has it been since your scuba certification course and how much do you remember from it? Because those certified in the last six months will have a definite memory advantage over those certified six years ago, a handicap must be factored into the results.

For each year since taking your scuba course, deduct one incorrect answer. Technically, if you were certified 20 years, you can do no wrong . . .

1. Everyone should remember Boyle's Law. It's got something to do with pressure. Right, but what is it exactly?
- If pressure decreases, volume decreases.
  - If pressure increases, volume decreases.
  - If pressure increases, volume increases.
- 

2. To overcome the effects of Boyle's Law, divers must:
- Consult the dive tables.
  - Hold their breath on descent.
  - Equalize pressure.
- 

3. What does the acronym scuba stand for?
- 

4. As a diver descends, air consumption increases, decreases or stays about the same as when breathing on the surface?
- 

5. If nitrogen buildup in the blood is the cause of the bends and compressed air is 80 percent nitrogen, why not just eliminate it and breathe pure oxygen?
- 

6. What is the first rule of scuba diving?
- 

7. What is the main difference between a single and double hose regulator—other than the number of hoses?
-

8. Every air tank has a number of markings on its neck. If you can correctly identify them all, skip the next two questions. DOT 3AA 2250, Z42137, TBS 6-80+.

---

9. High pressure air cylinders must be hydrostatically tested every \_\_\_\_\_ years.

---

10. Before storing an air tank, is it best to purge it of all air or to leave a couple hundred pounds in it?

---

11. Why is it that the human body is quite comfortable when the air temperature is 70 degrees, but quickly becomes chilled in water of the same temperature?

---

12. The fastest rate a diver should ascend is 50, 60, or 70 feet per minute.

---

13. Of all the accessories and gauges a diver carries, which is the most important?

---

14. Although rare, pressure injuries on ascent can be very serious. What is the most serious and how can it be prevented?

---

15. In 90 percent of decompression sickness cases, the primary symptom is?

- a. Nausea
  - b. Pain
  - c. Numbness
- 

16. To determine bottom time, you should time:

- a. Only the actual minutes spent at greatest depth.
  - b. The time from leaving the surface until returning to the surface.
  - c. The total time spent at all depths minus the descent and ascent.
- 

17. If a low volume, facially contoured mask is most desirable, why don't divers just wear goggles and be done with it?

---

18. The diving flag is white with a red diagonal stripe; red with a white horizontal stripe; or red with a white diagonal stripe?

---

19. If you are making a beach entry dive and encounter a rip current, which direction will it travel and what's your best course of action?

---

20. If the surface interval between two dives is less than 10 minutes, how should it be computed on a repetitive dive table?

---

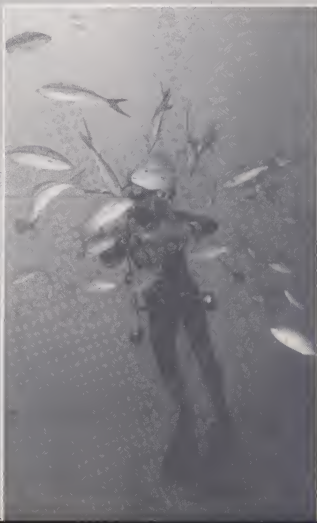
SCUBAPRO reserves the right to be wrong. We think we are correct but if you feel we have blown one, let us know. Check your answers against the ones on page 78. Now total your correct answers. If you scored:

0-5 You're just blowing bubbles.

6-10 You should have that "sinking feeling."

11-15 You've earned the gentleman's "C."

16-20 You're a certified quiz whiz.



# SHOPPERS' CORNER



## NEW TOPSIDE FASHIONS

The handsome, functional "Windjammer" jacket shown above left, features a two-tone gray and black outer shell of Burlington "VersaTech" fabric for maximum water repellency. It has a ventilated mesh lining allowing for excellent breathability. The "Windjammer" also has a zip-thru convertible collar and two outer pockets with storm welts. It is available in small, medium, large and extra large.

Made of long wearing polyurethane "Dura-Hide," the SCUBAPRO "Avanti" jacket gives the appearance of fine leather. Perfect for semi-dress or sport attire, the "Avanti" has a stand-up collar with zip-out storm collar. The jacket features many pockets, including a distinctive chest pocket, as well as a sleeve pocket and standard front pockets. The "Avanti," shown above right, offers

enough pockets for just about anything. It is available in small, medium, large and extra large.

The SCUBAPRO "Poplin" baseball cap is made of black cotton/poly blend with a one piece front. The cap is embroidered with silver lettering and is a perfect "top" for any of SCUBAPRO's fashion outfits. One size fits all.

## SWEATSHIRT AND WARM-UP PANTS

Stay warm and look great in a new, classy SCUBAPRO sweatshirt made of 50 percent acrylic fibers and 50 percent cotton luxury blend fleece. Complemented by a double-stitched yoke and three-button front, this sweatshirt features white "puff" print lettering on the front of the white sweatshirt.

SCUBAPRO's warm-up pants are perfect for after-dive attire. Matched with a SCUBAPRO sweatshirt, they become a complete outfit. The warm-up pants are Navy blue with white lettering and are available in small, medium, large and extra large as is the sweatshirt. All fashions are available exclusively at your local SCUBAPRO dealer.

## NEW SWEATSHIRT, "T" SHIRT AND COTTON SHORTS

Sporting the "oversize" look, short sleeves and crew neck, the new SCUBAPRO sweatshirt is a must for the diver who likes to look great. Ideal for after-dive wear or just lounging around, the sweatshirt, shown left, is available in medium, large and extra large and features SCUBAPRO's new "puff" lettering in white on the aqua colored sweatshirt.

SCUBAPRO's "T" shirt is made of 100 percent, heavy weight, preshrunk cotton. It features a knit crew neck collar, hemmed cuffs and waistband with SCUBAPRO's

logo printed on the pocket and SCUBAPRO printed on the left sleeve. The "T" shirt is available in small, medium, large, and extra large.

For the latest look of comfort in 100 percent crinkle cotton, choose SCUBAPRO shorts. With elastic drawstring and two side pockets, the shorts are perfect for everyday wear. They are available in small, medium, large and extra large.

## SCUBAPRO G250 SECOND STAGE

"The G250 was designed for total breathing comfort!" This promise is contradictory within itself because what would be comfortable to one diver and set of conditions may very well not be comfortable to another. So how can we make this promise? Simple . . . the G250 can be adjusted "in the water" to breathe exactly the way the diver chooses. Both the initial inhalation resistance and the aspirated flow can be adjusted by two external controls at the diver's discretion.

SCUBAPRO has also formulated a new graphite-reinforced nylon case for the G250, making it nearly indestructible. The graphite-reinforced nylon case is 30% lighter, and its impact resistance is 2 1/2 times greater than before. Remaining corrosion free and completely "state-of-the-art," the G250's graphite-reinforced nylon case will provide a lifetime of durable service.



## LOW PROFILE COMPASS . . .

Made of durable impact and abrasive resistant Acetyl and polycarbonate materials. This sophisticated instrument is engineered for the recreational diver. Designed to be worn independently or installed in SCUBAPRO's V.I.P. console, this new low profile compass provides easy-to-



read, at-a-glance information as to diver direction.

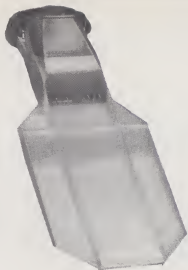
The low profile compass is oil filled with a high-luminosity, phosphor coated face that is visually compatible with all other SCUBAPRO instruments. The bezel is marked with a large, luminous north-zero reference and degree markings are clearly marked in 10-degree increments. The bezel is easy to manipulate bi-directionally with gloves, making course setting easy.

Available as a separate unit for installation in the V.I.P. console or with a very attractive thermo plastic elastomer wrist strap with integrally molded buckle, allowing easy adjustment and compensation for wet suit squeeze.



## A.I.R. II

A.I.R. II (alternate inflator regulator) combines a power inflator and second stage regulator. It offers easy access because of its consistent position on your buoyancy device. The A.I.R. II design eliminates a low pressure hose, reducing clutter for the diver and the possibility of debris or sand accumulating in your safety system. Additionally, the A.I.R. II meets or exceeds standard requirements of certifying agencies. Order yours today from your local authorized SCUBAPRO dealer.



## ALL RUBBER SEA WING

The All Rubber Sea Wing is an unique compromise between the pure power of a stiffer bladed fin and the total comfort of a flexible fin. The natural "snap back" of rubber provides excellent swimming efficiency, even at the lightest kick, and still has enough blade resistance to supply power when it's needed. If you're looking for a better Jet Fin, and you like basic black, the All Rubber Sea Wing is for you. Available at your authorized SCUBAPRO dealer, the All Rubber Sea Wing is produced in three sizes: medium, large, and extra large.

## NEW TRI-VENT MASK

If you're looking for a purge mask that clears easily and vents the exhaust bubbles to both sides of the mask, the SCUBAPRO Tri-Vent is the answer. The newly designed purge valve is accurately positioned to drain "all" of the water from the mask with almost no clearing effort. The water and air exit the purge system through two tunnels designed to direct the flow "under" the mask and to both sides, keeping the rush of bubbles away from the path of vision. The side lenses are positioned to provide nearly normal peripheral vision and the front pane is a single piece of tempered glass with no center obstruction. Fit and comfort are provided by SCUBAPRO's soft crystal Silicone skirt accented with either a blue or orange frame. You don't have to be an Old Salt to appreciate this mask. See it at your authorized SCUBAPRO dealer.



## V.I.P.

SCUBAPRO's new V.I.P. (Vital Information Package) console positions all the gauges to safely monitor your dive at your fingertips. This one-piece molded, soft rubber console provides high visibility and protection for your SPG and depth gauges. Available now at your local authorized SCUBAPRO dealer.



## TWO BOOKS ADDED TO LIBRARY

SCUBAPRO is pleased to announce the addition of two new books to its library. Both books are written by Carlos Eyles. Carlos is one of those unique individuals who can transfer their experiences into a written form that's entertaining to us all. *The Last of the Blue Water Hunters* Packed with adventure, this book includes everything from shark attacks to divers being towed to sea by giant fish. *Diving Free* Reveals to everyone the excitement and freedom of diving in the underwater world.

Available at your SCUBAPRO dealer.





BY ERIC HANAUER

# Tails of Opening Night

**F**or California divers, midnight, the first Wednesday in October is like Christmas, New Year's Eve, and a birthday all rolled into one. It's opening day of lobster season, and hordes of divers enter the water at the stroke of twelve in search of *Panulirus interruptus*. If they are quick, and lucky enough to be in a productive spot, they can bring home up to seven legal "bugs."

Lobsters can only be caught by hand in California (except on a commercial license), and with reactions seven times as fast as a human's, they have a sporting chance to get away with their tails intact.

The season lasts until the first Wednesday after March 15, but Opening Night is the big one. More divers are in the water chasing lobsters than on any other night of the year. That's because the tasty crustaceans have gone seven months without being chased, and commercial trappers haven't yet had a shot at them. Chances of catching a limit are best on this night and with so much action, there are bound to be bizarre experiences and funny stories to tell. What follows is a collection of some of the strange but true tales of opening night.

---

*Eric Hanauer is an Associate Professor of Physical Education at California State University, Fullerton. He is presently in Egypt working on a book on diving in the Red Sea.*

## "Honest, Officer"

The California Fish and Game Department is seriously understaffed. Therefore, on opening night wardens are called in from the hills, deserts, and forests to patrol the seashore and check for licenses, limits, and sizes.

At 1 a.m., I exited the surf at Crescent Bay in Laguna Beach, with three bugs in my bag, not bad for a beach dive. The warden was waiting and asked to see my catch. As soon as he began to measure the lobsters, I knew he wasn't a

regular because he was doing it backwards. I showed him the proper way, starting at the end of the carapace and making sure the measuring device didn't slip over the eyes. A legal lobster must be 3¼ inches from the eye socket to the end of the carapace, or about 11 years old. The warden was amiable, and seemed to appreciate the help.

Next I asked him for permission to tail the lobsters. The law states that all lobsters must be brought above the mean high tide mark intact, so sizes can be measured. He watched, fascinated, as I twisted off the tail, broke an antenna, and pushed it up its anus to remove the intestinal tract. Then I threw the carapace into the surf where it would be quickly consumed by scavengers.

"Wow," he exclaimed. "Is it going to grow a new tail?"

## Lost at Sea

It's 2:30 a.m. Six of us are back on the boat, with 30 lobsters in tow. It's taken two dives to do it, but still an extremely successful opening night. Just one problem. Andy Jahn isn't back on board. He hit the water with the rest of us, but sometimes when bug fever hits, buddy diving isn't as high a priority as it should be. Besides, he's a marine biologist, an experienced diver, and able to take care of himself.

That's what we thought, but his buddy had returned 30 minutes before and Andy was still missing. We were anchored about 150 yards off the Redondo Beach Breakwater, and kept scanning the surface for a sign of a light. Now we began to worry. Just inside the breakwater lies the intake for the local generating plant. About 10 years before, a lob-

*Most California divers rank the opening of  
the lobster season above Christmas.*

*The start of a limit of California spiny  
lobsters.*





## Grabbing Bugs

The following are some helpful hints on catching lobsters, gleaned from the experiences of veteran divers.

A bright, wide-angle light is important at night. With live lobsters currently selling at over \$8 per pound, a limit of seven will just about pay for the brightest, most expensive light.

Move quickly and cover a lot of territory. Think like a lobster, i.e. "Where would I be hiding or foraging if I were a bug?" Be mentally prepared for any sign of a bug: antenna, legs, or eye spots. Don't be squeamish or afraid to grab it tightly. California lobsters have no claws. However, they do have sharp spines, so a sturdy pair of gloves is necessary.

When you spot one in the open, move in quickly and keep the light shining in its eyes. But stop the forward movement of the light about two feet away from the bug. The goal is to get the lobster to direct its

sensitive antennae toward the light. Reach behind it with the other hand, and jam the tail and carapace down against the substrate. Then get a good grip and hold on tightly.

If the lobster is in a hole, reach in and grab for the horns, at the base of the antennae. Don't grab an antenna, because they break off easily, and there isn't much meat inside. The bug will spread out its 10 legs and wedge itself in the hole, almost impossible to pull out. Don't pull, but shake it instead. Shaking seems to make a lobster seasick. It relaxes its grip, and will be easy to pull out.

A lobster isn't caught until it's bagged. Measure it first, then have your buddy hold the game bag open. Continuing to hold it tightly, jam it into the bag, tail first. Lobsters are very sensitive to a relaxing grip, and can get away with a quick thrust of their tail. They swim backwards. Have your buddy close the bag on your arm, then withdraw the arm.

Good hunting.

ster diver had blundered into it, thinking it was a cave, and drowned. But Andy is a PhD and knows better, or does he?

We pulled anchor and slowly cruised in circles looking for him. Almost 3 a.m., and still no sign. By now we were sure he was dead. Suddenly, someone noticed a faint light far out to sea. We sped toward it, and there was Andy. We didn't know whether to curse him or kiss him. "I'm sure tired and glad to see you guys," he grinned.

What was he doing here, almost a mile offshore? "Swimming toward that light over there," he replied.

The light belonged to a fishing barge, anchored two miles out to sea. He had mistaken it for our anchor light, and was heading in the general direction of Hawaii.

### Honest, Officer II

It wasn't an auspicious start for opening night. As we assembled our gear at the dock, I realized I had forgotten my wet suit. It was a half hour drive back home, so I told my buddies, Jim Dexter and Dan Miller, to go ahead without me. I would return and meet them in time for a second dive.

At 1:30 in the morning, I was speeding down the Coast Highway, heading back toward Dana Point with my wet suit. Suddenly a red light flashed in the mirror. One of Newport Beach's finest pulled me over. "Where do you think you're going at this speed?" he asked.

"Lobster diving," I meekly replied. The officer did a double take, then checked the dive gear in back of my van. He probably assumed that anyone crazy enough to enter the ocean at this hour had enough problems without a ticket, so he let me slide.

By the time I arrived, Jim and Dan had returned from the first dive with some lobsters, but short of a limit. So we headed back for more, and caught a few. Upon our return to the harbor, the first streaks of dawn were lighting the eastern sky. Another inflatable entered just ahead of us, and the game warden was there to meet it. On board, he found a couple of short lobsters.

Since our boat resembled theirs, and we had followed them in, the warden assumed we were together. He also assumed where there is one short bug, there must be more. After checking ours and finding all of them legal, he turned his attention to the van. Our catch from the first dive was inside, and all these measured legal as well. The late hour didn't do much for our attitude, and our belligerent reaction didn't help the warden's disposition either. Still not satisfied, he completely ransacked the van in a vain attempt to find the short lobsters he was sure were stashed somewhere.



Dive clubs often hold opening night weigh-ins. A special measuring device insures only legal lobsters are taken.

We failed to make his day, but then he didn't do much for ours, either.

### Epidemic

The absentee rate at the work places of California divers must hit a high for the year on the first Wednesday in October. We had been to Catalina Island for three dives, got caught in dense fog, and didn't return home until 8 a.m. Too late to go to work, and in no condition to accomplish anything worthwhile, I took the day off.

Upon returning to work on the following day, I was asked to fill out a sick leave form. I didn't want to lie anymore than necessary, so the line asking the nature of the illness was left blank.

The department secretary informed me that I would have to fill in something.

"What if it's a disease I'm ashamed of?" I asked.

"I'm sorry," she replied, "if you want sick pay, you have to put down an illness."

I thought for a moment, then wrote: "*Panulirus interruptus*."

Nobody asked any more questions.

### What Are Friends For?

The night hadn't been very productive. I was down to 300 pounds of air, and we hadn't spotted a legal lobster yet. Suddenly my buddy, Mike Curtis, flashed his light and swam for the top of a nearby reef. On it was a veritable convention of lobsters. It seemed like all the bugs in Laguna Beach had gathered on this one spot to hide from predatory divers. We had never before seen so many of them in one place. In a wild frenzy born of frustration and greed, we started grabbing bugs, measuring them, bagging the legals and tossing aside the



shorts. By now I had hyperventilated the last of my air, so I took Mike's octopus and resumed grabbing lobsters. Suddenly, he yanked the regulator out of my mouth.

It was only 30 feet to the surface, so I made an emergency ascent and waited for him. When he came up, I let loose a string of foul invectives, finally asking, "Why the hell did you pull the regulator out of my mouth?"

He replied with a grin, "I wasn't about to let your grab *my* bugs with *my* air."

### Honest, Officer III

Hank Harper is a man who has everything—a Porsche, a beautiful home, and his own dive boat. The one thing he didn't have was a porthole of his very own. He was diving on the *Retriever*, a 120-foot deep wreck off the coast of Redondo Beach. It was quite productive for lobsters and, because of limited bottom time, Hank bagged everything close to legal size. He intended to measure them on the boat, and throw back the shorts. That's illegal according to the letter of the law, but some divers do it.

Hank was just about to head up when he spotted a glint of brass in the sand. A porthole! It was too heavy to bring up without a lift bag, so with the last of his remaining air, he hooked it to the anchor and swam for the surface with his lobsters. Realizing he had exceeded the no-decompression limit, Hank quickly threw the lobster bag on board, grabbed another tank, and began the slow, tedious missed decompression procedure on the anchor line. Visions of a gleaming porthole on his wall kept him warm.

Upon returning to the surface, there was a rude awakening. The game warden had pulled alongside, measured Hank's lobsters, and found some shorts. Turning a deaf ear to explanations, he wrote up a ticket.

The amount of the fine wasn't a problem. But Hank prided himself on being a top gun in the lobster catching department. In fact, he usually returned the biggest ones to the sea rather than kill them, and had never kept a short bug. The disgrace among his peer groups for



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[GROUP RATES ON REQUEST]

getting cited was just too much to bear.

He decided to go to court and throw himself on the mercy of the judge. "Your Honor," he began, "do you know anything about diving?"

"I was a commercial abalone diver for 12 years," the judge replied.

An enormous weight seemed lifted from Hank's shoulders as he told the story only a fellow diver could appreciate. The judge let him off with a suspended sentence.

### Hot to Ruin an Opening Night

It was Tuesday afternoon before the big night, when my buddy's girl friend

broke the news that she was pregnant. The poor guy's mind wasn't on lobsters, and he had the worst opening night of his career.

Why do so many divers hit the water on opening night, even those not normally into underwater hunting? It's not the catch, but the chase that is the true reward. The bugs that are caught, even the ones that get away, contribute to the legends. If there is one thing divers love more than diving, it's telling diving stories. Long after the lobsters have been eaten, tales of opening night adventures continue to be told, becoming more vivid with every retelling. **\$**

## WALLS

(Continued from page 25)

abruptly becomes a 45 degree seaward slope. Here sediments raining down from above, have collected densely like snowfields on a mountainside.

The captain invites us, each in turn, to stand up inside the turret and look through its four flat viewing ports. Great buttresses and escarpments are crowned with white sediments. The total effect is like flying alongside a rugged, snow-covered mountain range illuminated by moonlight.

Everywhere, strange filamentous creatures live precariously atop the outcrops. No one breathing from a scuba tank has ever seen these animals. We have just reached 700 feet.

Growing from each promontory, deep-water soft corals reach upward toward the dim light. Many bear shapes totally unfamiliar to us. Several species of black corals are found only at these depths; they resemble bouquets of thin, spiraling wires, or bright orange lacy fans. The stalked crinoids, or feather stars, look like white umbrellas with 20-inch handles.

"The sub's going to make a loud noise now," warns the captain. With a sudden roar, the engines perform a new maneuver. "There, you've done it!" he says. "You've been to 800 feet!"

Suddenly, he turns off all the floodlights. We stare in disbelief. Even at this depth, we can still see the wall by natural light. Sunlight penetrates sufficiently to illuminate details on the wall's face.

All too soon, we're back on the surface. Our silent passage into the depths seemed almost effortless. And we have a totally new concept of a wall we thought we knew so well.

Photographing walls is the supreme challenge. Imagine trying to capture the grandeur of the Grand Canyon in a heavy fog that reduces visibility to less than 100 feet.

The best approach to wall scenics is to place the wall's edge in silhouette, and to turn the camera to a vertical position. Aim upward toward the bright blue surface to create great contrast. If possible, aim high enough to include the sun in your picture. Ideally, find a colorful foreground subject, such as a sponge, and illuminate it with your strobe. The final ingredient is the perennial background diver, in silhouette, preferably eclipsed against the sun.

Wherever subsea walls are found, they will continue to lure divers just as the Alps and the Rockies lure skiers. No matter how confident we feel as divers, we have only to sail over the wall, arms spread like a bird in flight, to feel suddenly quite insignificant against the immensity of nature's marine kingdom. **\$**

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92 Page Equipment Selection Guide  
Available At Your Scubapro Dealer



# The G-200 & MK-200, A Perfect Match

BY CLARK ADDISON

*Introducing two new regulators for value conscious divers who demand SCUBAPRO reliability and performance.*

A new, competitively-priced regulator has been introduced by SCUBAPRO for the diver on a budget who still demands real performance. The G-200 is a reliable, safe and comfortable second stage ideally suited for the beginning diver. Experienced divers will find the G-200 to be a solid backup regulator or a dependable octopus, and instructors and dive store owners need look no further for the perfect regulator for class work or rentals. Legendary SCUBAPRO performance is now available to meet every need at an easily affordable price.

In designing the G-200, SCUBAPRO's goal was to produce an easy-breathing regulator for entry-level divers who need good breathing characteristics. The new regulator incorporates improved performance and high reliability features of SCUBAPRO's high performance regulators and is rugged enough for rental use with minimum maintenance requirements.

Dean Garraffa, the SCUBAPRO engi-

neer who designed the G-250, was assigned the task of developing the new model. He began with a graphite-fiber-glass reinforced nylon case, including diver-controlled V.I.V.A. This is the flow vane that sets SCUBAPRO's 200 series apart from all other regulators. It's so revolutionary that a US patent is pending on it. The flow vane deflects the airstream, changing its intensity. At its highest position, a maximum venturi force is generated by air streaming directly out of the mouthpiece.

According to Garraffa, the flow vane is the critical performance factor in the second stage. It allows the regulator to be adjusted for normal changes in dive conditions. With V.I.V.A. turned down, the G-200 can be used as an octopus without worrying about free-flow. Wide open, its air delivery is strong, even at depth. In chamber tests, the new model supplied air at a moderate work rate, as defined by the Navy, to a depth of 400 feet.

The G-200 also incorporates an integrated exhaust tee, with an exhaust valve 40 percent larger than can be found in other comparable regulators. It does not have the balanced poppet and external cracking effort adjustment

of upper-line regulators. Cracking effort is adjustable by the dive shop's certified technician.

To complete the G-200 system, Garraffa designed a new first stage to go with it, the MK-200. This is an unbalanced first stage incorporating significant design changes to enhance performance and maintain reliability. His goal was to approach the performance of a balanced first stage with an unbalanced design.

A balanced first stage supplies a constant intermediate pressure to the second stage throughout the dive. The unbalanced first stage supplies an intermediate pressure which changes with tank pressure. The goal of the MK-200 is to minimize the change in intermediate pressure making it act more like a balanced first stage. Improved piston design in the MK-200 has accomplished this goal. Also, improved air flow at depth and under heightened work rates when it is most important, has been achieved with improved porting in the MK-200.

The result is a consistent, stable first stage that doesn't require a lot of fine tuning. Between tank pressures of 3,300 to 300 psi, intermediate pressure differ-

*Clark Addison is a free-lance writer and photographer living in California who frequently writes about new diving products.*

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# Specifications

## MK-200 First Stage

Type: Conventional piston

Materials: Chrome-plated brass piston, body & yoke, molded nylon seat, stainless steel springs.

High pressure ports: One

Low pressure ports: Three

Intermediate pressure: 120-140 psi @ 300-3,300 psig

Flow at 2,000 psig: 49 SCFM (1,387 liters/minute)

Flow at 300 psig: 31 SCFM (877 liters/minute)

Special features: Silicone protected environmental case with optional S.P.E.C. boot.

Hose length: 32 inches

## G-200 Second Stage

Type: Downstream, lever action with V.I.V.A.

Materials: Graphite/fiberglass reinforced nylon case, silicone diaphragm, exhaust valve, mouthpiece, neoprene seat, stainless steel spring.

ential is only 20 psi.

Although performance is excellent with the MK-200, a balanced regulator does add additional performance in those critical situations when diving deep at low tank pressure.

SCUBAPRO feels with the specially designed piston and enhanced porting, the MK-200 is the highest performance, unbalanced first stage available.

Like SCUBAPRO's other first stages, the MK-200 offers the added safety of a silicone-protected environmental cap. Small holes drilled in the perimeter of the cap allow injection of a special environmental silicone. This protects the ambient pressure chamber from contamination by salt, sand, or other waterborne impurities, and also lubricates the piston, spring and O-rings. An optional rubber boot (patent pending) exclusive of the MK-200, fits over the end of the first stage, totally isolating the chamber from contact with water, and protects the MK-200 from impact damages.

The MK-200 first stage offers a single high pressure port and three fixed low pressure ports. The large conical filter found in all SCUBAPRO's regulators is also standard in the MK-200.

Our open water testing was conducted at Ship Rock, Catalina Island, California. On our descent, we checked breathing characteristics in different positions, including normal swimming, vertical, upside down, and on the back. The G-200 felt totally comfortable, almost like taking a roomful of air down with me. There were no unusual traits, leaks, or free flows, even in a headfirst position. Only when looking upward, or on my back, did inhalation effort markedly increase.

Free-flow was induced whenever the regulator was removed with the mouthpiece facing up. It stopped as soon as

the mouthpiece was turned downward. This can be corrected by the diver by adjusting the V.I.V.A. flow valve.

Below 100 feet, we tested the G-200 in hard breathing situations—the type of breathing used for heavy exertion such as working or swimming. This is the area where the true high performers are separated from the pretenders. The G-200 continued to supply generous volumes of air with a comfortable, natural feel. A slight water mist accompanied hard inhalations, but not enough to be bothersome. The high air volume at depth was impressive.

We began ascending at 1,000 psi. In shallower water, a marked increase in

both cracking effort and airflow was felt when tank pressure dropped below 500 psi. This is where the benefits of a balanced first stage become most apparent. If you are going deep and breathing your air supply low, you may want the improved performance of a balanced first stage. In shallower waters, or at higher tank pressures, the MK-200 is fine.

With its simple design, Garaffa expects the G-200 to be one of the most reliable regulators SCUBAPRO has ever produced. This would be an ideal first regulator for new divers as it offers excellent performance in an economical format.

Weight without hoses: 7.12 ounces (202 grams)

Average flow: 32.5 SCFM (920 liters/minute)

Average inhalation resistance: 1.2-2.0 at surface

Average exhalation resistance: 0.4 at surface

Maximum intermediate pressure: 150 psig

Special features: Diver adjustable venturi boost (V.I.V.A.), optional balancing kit available.

Warranty: Limited Lifetime

Prices: First stage \$90, second stage \$150, MK-200/G-200 combination \$210.



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Most shops listed offer sales, service, rentals, instructions and tank refills. Please call for specific information.

# SCUBAPRO

## authorized dealers



Illustration by Nick Fain

### ALABAMA

#### Capitol Dive Center

5163 Atlanta Hwy.  
Montgomery 36109

(205) 279-6002

Tuesday-Friday: 10 to 6

Monday: 12 to 6

Saturday: 10 to 5

#### Hydro Space Scuba School

1605 South Oates

Dothan 36301

(205) 793-3271

Monday-Friday: 10 to 5:30

Saturday: 9 to 3

#### Key West Diving Company

215 East 19th St.

Anniston 36201

(205) 237-1488

Mon., Tues., Thurs., Fri.: 11 to 7

Saturday: 9 to 2

Closed Wed. and Sun.

#### Ski & Scuba

628 15th Street East

Tuscaloosa 35401

(205) 758-3900

Hours: 9 to 6

#### Tropical Outfitters

Watersports, Inc.

Route 1, Box 586 • Hwy. 59

Gulfport 38542

(205) 968-2339

Daily: 9 to 6

### ALASKA

#### Alaska Mining & Diving

Supply Inc.

3222 Commercial Dr.

Anchorage 99501

(907) 277-1741

Monday-Saturday: 9 to 8

#### Denali Diving Specialties

Mt. 42 Parks Hwy.

Wasilla 99567

(907) 376-9483

Monday-Saturday: 10 to 6

Closed Tues. & Sun.

#### Don's Dive Shop

106 Forest Dr.

Kenai 99541

(907) 283-5109

Monday-Saturday: 10 to 8

#### Mac's Dive Shop

2214 Muir St.

Juneau 99801

(907) 789-5115

Monday-Friday: 10 to 6

Saturday: 10 to 6

Sunday: 12 to 5

#### Sunshine Sports

1231 W. Northern Lights Blvd.

Anchorage 99503

(907) 272-6444

Monday-Friday: 9:30 to 8

Saturday: 9:30 to 8

Sunday: 12 to 5

### ARIZONA

#### Aqua Sports

4230 E. Indian School Rd.

Phoenix 85018

(602) 955-4120

Monday-Friday: 9 to 6:30

Saturday: 9 to 5:30

#### Desert Divers of Tucson

3550 N. 1st Ave. Ste. 140

Tucson 85719

(602) 887-2822

Monday-Friday: 10 to 6

Saturday: 10 to 3

#### Tucson School of Diving

3575 E. Speedway

Tucson 85718

(602) 795-1440

Tuesday-Saturday: 10 to 7

#### Water Sports Centers Inc.

1000 McCulloch

Lake Havasu City 86403

(602) 855-2141

### ARKANSAS

#### Rick's Pro Dive 'N Ski Shop Inc.

2323 N. Poplar

N. Little Rock 72114

(501) 753-6004

Monday-Friday: 10 to 8

Saturday: 10 to 6

#### SportsCo-Scuba Hut

2007 W. Sunset

Springdale 72764

(501) 751-0638

Monday-Saturday: 9 to 6

### CALIFORNIA

#### Aloha Diving School

7626 Tampa Ave.

Redwood City 94061

(415) 343-6343

Monday-Saturday: 12 to 7

#### American Diving

1901 Pacific Coast Hwy.

Lomita 90717

(213) 326-6863

Daily: 10 to 7

#### Aqua Ventures

2172 Pickwick Dr.

Camarillo 93010

(805) 484-1594

Monday-Friday: 10:30 to 8

Saturday: 9:30 to 7

#### Aqua Ventures

1001 S. Harbor Blvd.  
Oxnard 93030  
(805) 985-8861  
Monday-Thursday: 10:30 to 6  
Fri. & Sat.: 9 to 6:30

#### Aquarius Dive Shop

2240 Del Monte Ave.  
Monterey 93940  
(408) 375-1933  
Monday-Friday: 9 to 8  
Sat. & Sun.: 7 to 6

#### Aquarius Dive Shop

#32 Cannery Row, Unit #4  
Monterey 93940  
(408) 375-6805  
Mon.-Wed.: Fri. 9 to 6  
Sat. & Sun.: 7 to 6  
Closed Tuesday

#### Bob's Dive Shop

374 N. Blackstone Ave.  
Fresno 93725  
(209) 225-DIVE  
Monday-Friday: 10 to 7  
Saturday: 9 to 6

#### Cal Aquatics/Scuba Luv

22725 Ventura Blvd.  
Woodland Hills 91364  
(818) 346-4799  
Hours: 10 to 6

#### Catalina Divers Supply

On The Pier  
Avalon 90704  
(213) 510-0330  
Daily: 9 to 6

#### Colo-Riv-Vel Divers & Supply

2001 De Soto  
Needles 92363  
(714) 326-3232

#### D.B.B. Dive Shop

PO Box 5428  
Rancho Dominguez 90221  
Monday-Friday: 10 to 9

#### Depth Perceptions

Diving Services  
1325 #3 2nd St.  
Los Angeles 90042  
(805) 528-1070

#### Divers Corner

Monday-Friday: 6 to 11 p.m.  
Sat. & Sun.: 9 to 6

#### Dive West

115 W. Main St.  
Santa Maria 93454  
(805) 925-5878  
Monday-Saturday: 10 to 6  
Sunday: 12 to 6

#### Divers Corner

2045 Paramount Blvd.  
Downey 90242  
(213) 869-7702  
Mon., Wed., Fri., Sat.: 9 to 6  
Tues., Thurs.: 9 to 9

#### Divers Supply

Santa Barbara County  
5822 Hollister Ave.  
Goleta 93117  
(805) 964-0180  
Monday-Friday: 10 to 6  
Saturday: 10 to 5:30

#### Divers West

2695 "A" E. Foothill Blvd.  
Pasadena 91017  
(818) 796-4267  
Tuesday-Friday: 10 to 7  
Saturday: 9 to 6

#### The Diving Locker

620 Grand Ave.  
San Diego 92109  
(619) 272-1120  
Monday-Friday: 9 to 7  
Sat. & Sun.: 8 to 5

#### The Diving Locker

948 E. Grand Ave.  
Escondido 92025  
(619) 746-8980  
Monday-Friday: 10 to 7  
Saturday: 9 to 6

#### The Diving Locker

405 N. Hwy. 101  
Solana Beach 92075  
(619) 755-6822  
Monday: 10 to 6  
Tuesday-Friday: 9 to 6  
Sat. & Sun.: 8 to 5

#### Far West Marine Center

2941 Willow Lane  
Thousand Oaks 91361  
(805) 495-3600  
Monday-Friday: 9 to 6  
Saturday: 9 to 5

#### Far West Marine Center

1727 Los Angeles Ave.  
Simi Valley 93065  
(805) 522-3483 (DIVE)  
Daily: 10 to 6

#### Far West Marine Center

18917 1/2 Soledad Canyon  
Canyon Country 91351  
(805) 252-6955  
Monday-Friday: 10 to 7  
Saturday: 10 to 5

#### Howell's Dive Shop

1426 Eureka Way  
Redding 96001  
(916) 241-1571  
Monday-Saturday: 8 to 6

#### Innerspace Divers

1305 N. Chester  
Bakersfield 93308  
(805) 399-1425  
Monday-Friday: 10 to 8  
Saturday: 10 to 3

#### Island Marine & Sporting Goods

124 Catalina Ave.  
Avalon 90704  
(213) 510-0238  
Daily: 9 to 4

#### La Jolla Divers Supply

7522 La Jolla Blvd.  
La Jolla 92037  
(619) 459-2591  
Monday-Friday: 9 to 6  
Saturday: 8 to 6

#### Malibu Divers

21231 Pacific Coast Hwy.  
Malibu 90265  
(213) 456-2395  
Monday-Friday: 10 to 6  
Sat. & Sun.: 8 to 6

#### Marin Skin Diving

3765 Redwood Hwy.  
San Rafael 94903  
(415) 478-4332  
Monday-Friday: 10 to 7  
Sat. & Sun.: 9 to 5

#### Marina Del Rey Divers

2539 Lincoln Blvd.  
Marina Del Rey 90291  
(213) 827-1131 CA only  
1-800-227-9042 Others  
Friday, Saturday: 10 to 7:30  
Sunday: 10 to 4:00

#### Motherlode Skin Diving

2020 "H" St.  
Sacramento 95814  
(916) 446-4041  
Monday-Friday: 9 to 6  
Saturday: 10 to 4

#### NAPA Gun & Dive Exchange

950 Randolph St.  
Napa 94559  
(707) 255-3900  
Monday-Saturday: 9 to 6

#### Ocean Rhythms

27601 Forbes Rd., #19  
Laguna Niguel 92677  
(714) 582-3383  
Mon., Wed., Sat.: 10 to 6:30  
Sunday: 8 to 2

#### Olympic Scuba Schools

2585 N. Main St.  
Walnut Creek 94596  
(415) 933-6045  
Monday-Friday: 10 to 6  
Saturday: 10 to 5

#### Openwater Habitat, Inc.

411 South Main St.  
Orange 92668  
(714) 633-7283/CA 1-800-334-6467  
Monday-Friday: 11 to 8  
Saturday: 10 to 8  
Sunday: 12 to 4

#### Outrigger Dive Shop

210 Winchester Blvd.  
Campbell 95008  
(408) 374-8411  
Monday-Friday: 10 to 7  
Saturday: 9 to 5:30

#### Pacific Scubamut

8959 Van Nuys Blvd.  
Van Nuys 91405  
(818) 787-7066  
Monday-Friday: 10 to 7  
Saturday & Sunday: 9 to 6

#### Pacific Sporting Goods

11 38th Pl.  
Long Beach 90803  
(213) 434-1604  
Monday-Thursday: 10 to 6:30  
Friday: 10 to 7, Sat.: 9 to 6  
Sunday: 9 to 5

#### Pacific Wilderness & Ocean Sports

1718 S. Pacific Ave.  
San Pedro 90731  
(213) 833-2422  
Monday-Thursday: 10 to 6:30  
Friday: 10 to 7, Sat.: 10 to 6  
Sunday: 9 to 5

#### Peninsula Diving Center

1015 W. El Camino Real  
Mountain View 94040  
(415) 965-2241  
Tuesday-Friday: 10:30 to 7  
Saturday: 10 to 5

#### The Pinnacles Dive Center

875 Grant Ave.  
Novato 94947  
(415) 897-9962  
Monday-Friday: 10 to 7  
Sat. & Sun.: 8 to 4

#### The Pinnacles Dive Center

212 Armory Dr.  
Santa Rosa 95401  
(707) 542-3100  
Monday-Friday: 10 to 7  
Sat. & Sun.: 8 to 4

#### Reef Seekers Dive Company

8642 Wilshire Blvd.  
Beverly Hills 90021  
(213) 652-4990  
Monday-Friday: 10 to 7  
Saturday: 10 to 6  
Sunday: 12 to 5

#### San Diego Divers Supply

4004 Sports Arena Blvd.  
San Diego 92110  
(619) 224-3439  
Monday-Thursday: 9 to 7  
Friday: 9 to 9  
Sat. & Sun.: 8 to 6

#### Scuba Dubs Dive Shop

7126 Reseda Blvd.  
Reseda 91335  
(818) 881-4545  
Monday-Saturday: 10 to 7

#### Scuba Haus

2501 Wilshire Blvd.  
Santa Monica 90403  
(213) 828-2916  
Monday-Thursday: 10 to 6  
Friday: 10 to 7  
Sat.: 10 to 6, Sun.: 12 to 5

#### Scuba Toys

9547 Valley View Ave.  
Cypress 90630  
(714) 527-0430  
Monday-Thursday: 10 to 7  
Friday: 10 to 9  
Sat.: 10 to 9, Sun.: 10 to 6

#### ScubaVentures

2222 E. Cliff Dr.  
Santa Cruz 95062  
(408) 478-5201  
Monday-Thursday: 9 to 5  
Saturday & Sunday: 8 to 6  
Friday: 9 to 6

#### Southern Calif. Diving Center

1121 S. Glamora Ave.  
West Covina 91790  
(818) 338-8863  
Monday-Saturday: 9 to 7  
Sport Diving West, Inc.  
11501 Whittier Blvd.  
Whittier 90601  
(213) 692-7373  
Monday-Friday: 10 to 8  
Saturday: 10 to 6  
Sunday: 10 to 6

#### Sports Cove

1410 E. Monte Vista  
Vacaville 95588  
(707) 448-9454  
Monday-Friday: 10 to 8  
Sat.: 10 to 6, Sun.: 12 to 5

#### St. Thomas Diving

5640 No. Blackstone  
Fresno 93610  
(209) 439-8888  
Mon. & Fri.: 10 to 7  
Tues. Wed. & Thurs.: 10 to 8  
Saturday: 10 to 5  
Closed Sunday

#### Stan's Skindiving

55 S. Bascom St.  
San Jose 95128  
(408) 294-7717  
Monday-Thursday: 10 to 6:30  
Friday: 10 to 6  
Saturday: 9 to 5

#### Steve's Ski and Sports

406 N. Main St.  
Corona 91720  
(714) 735-4240  
Monday-Thursday: 10 to 9  
Saturday: 10 to 6  
Sunday: 11 to 5

#### Stockton Aquatics

1127 West Fremont  
Stockton 95203  
(209) 467-DIVE  
Tuesday-Friday: 10:30 to 7  
Saturday: 11 to 5

#### Tri Valley Scuba School, Inc.

21310 San Ramon Valley Rd.  
San Ramon 94583  
(415) 628-5040  
Monday-Friday: 11 to 6  
Saturday: 10 to 4  
Sunday: 10 to 4

#### Utah Skin & Scuba

1900 "A" No. State St.  
Utah 95482  
(707) 482-5396  
Monday-Saturday: 9 to 5:30  
Closed Sunday

#### Valley Aquatics

1209 McHenry Ave. #C  
Modesto 95350  
(209) 527-2822  
Monday-Saturday: 10 to 6  
Closed Sunday

#### Ventura County Skin & Scuba

1559 Spinnaker, Suite 108  
Ventura 93001  
(805) 656-0167  
Monday-Saturday: 9:30 to 6  
Sunday: 10 to 5

#### Water Sports Unlimited

732 North H St.  
Lompoc 93436  
(805) 736-1800  
Monday-Saturday: 10 to 6  
Closed Sunday

#### COLORADO

#### Beaver Divers

41199 U.S. Highway 8 and 24  
Eagle Vail 81620  
(303) 634-5397  
Monday-Friday: 10 to 2, 3:30 to 8

#### Blue Mesa Scuba Center

1224 S. Townsend Ave.  
Montrose 81401  
(303) 248-8669  
Monday-Saturday: 9 to 5:30

#### Denver Divers Supply

557 Milwaukee  
Denver 80206  
(303) 398-2877  
Monday-Friday: 10 to 7  
Saturday: 10 to 6  
Sunday: 10 to 6

#### Diver's Reef

3014 N. Nevada  
Colorado Springs 80907  
(303) 634-3366  
Monday-Saturday: 10 to 6

#### CONNECTICUT

#### Swim & Dive Center (Multi-Tech)

180 Flinders Rd.  
Mastic 06357  
(203) 739-9596

#### DISTRICT OF COLUMBIA

#### National Diving Center

4932 Wisconsin Ave. N.W.  
Washington D.C. 20016  
(202) 363-6123

#### Sports Cove

Monday-Friday: 9 to 8  
Saturday: 9 to 5  
Sunday: 10 a.m. to 4 p.m. (5:30-10:30)

## FLORIDA

**ABC Sports Inc.**  
1915 Linhart  
Fl. Myers 33901  
(813) 334-4616  
Monday-Friday: 10 to 5:30  
Saturday: 10 to 3

**Adventure Scuba**  
150 N. U.S. Hwy. 1  
Tiqueta 33458  
(305) 746-1555  
Monday-Friday: 10 to 6  
Saturday: 8 to 6  
Sunday: 8 to 3

**American Diving Headquarters Inc.**  
Route 1, Box 2748  
Key Largo 33037  
(305) 451-0037  
Daily: 7:30 to 6

**American Scuba and Water Sports**  
7425 U.S. Hwy. 19  
New Port Richey 33552  
(813) 848-5085  
Monday-Saturday: 10 to 8

**Aqua Adventures**  
1095 Bald Eagle Dr.  
Marco Island 33937  
(813) 394-DIVE  
Daily: 9 to 6

**Aquaneats South**  
903 S.W. 87th Ave.  
Miami 33174  
(305) 252-9295  
Monday-Saturday: 9 to 7

**AquaShop**  
505 Northlake Blvd.  
North Palm Beach 33408  
(305) 848-9042  
Monday-Friday: 9:30 to 8:30  
Saturday: 7 to 8  
Sunday: 7 to 4

**Aquatic Center**  
2126 S.W. 34th St.  
Gainesville 32608  
(904) 377-DIVE  
Monday-Friday: 10 to 7  
Saturday: 10 to 5  
Closed Sunday

**Aquatic Divers**  
1327 South Federal Hwy.  
Danla 33004  
(305) 920-7626  
Monday-Friday: 9 to 8  
Saturday: 7 to 8  
Sunday: 7 to 2

**Blue Horizons**  
733 S.R. 584 W. #120  
Oldsmar 34677  
(813) 854-2298  
Monday-Friday: 9 to 8  
Saturday: 8 to 8  
Sunday: 8 to 2

**Buddy's Dive Shop**  
M.M. 06 Overseas Hwy.  
Islamorada 33036  
1-800-367-4707 In Florida  
1-800-223-4707 Others  
Daily: 8 to 6

**D & S Diving**  
940 West Brandon  
Brandon 33511  
(813) 889-3483  
Monday-Thursday: 10 to 8  
Friday: 10 to 7  
Saturday: 9 to 6

**Divers Dream East**  
2671 S.W. 27th Ave.  
Miami 33133  
(305) 856-0585  
Monday-Saturday: 10 to 7  
Closed Sunday

**Divers Dream North**  
839 W. 49th St.  
Hialeah, 33012  
(305) 362-1201  
Monday-Saturday: 10 to 7  
Closed Sunday

**Dive Shop II**  
Sea Mist Marina  
700 Casa Loma Hwy.  
Boynton Beach 33435  
(305) 734-5566  
Monday-Friday: 9 to 7  
Saturday & Sunday: 8 to 5

**Dixie Scuba School**  
2555 No. Monroe St.  
Tallahassee 32303  
(904) 385-1640  
Monday-Friday: 10 to 7  
Saturday: 9 to 6

**Frankie Dive Shop**  
301 E. Blue Heron Blvd.  
Riviera Beach 33404  
(305) 848-7632  
Monday-Friday: 8 to 5:30  
Saturday & Sunday: 7 to 5:30

**Hal Watts Mr. Scuba**  
2215 E. Colonial Dr.  
Orlando 32803  
(305) 896-4541  
Monday-Friday: 1 to 8:30  
Saturday: 9 to 6

**Hall's Dive Shop**  
1994 Overseas Hwy.  
Marathon 33050  
(305) 743-5929  
Daily: 9 to 6

**Key West Pro Dive Shop, Inc.**  
1605 N. Roosevelt Blvd.  
Key West 33040  
(305) 296-2823

**Ocean Pro Dive Shop Inc.**  
2259 Bas Ridge Rd.  
Sarasota 33579  
(813) 924-3483  
Monday-Thursday: 10 to 6  
Friday: 10 to 9  
Saturday: 9 to 8

**Panama City Dive Center**  
4823 Thomas Dr.  
Panama City 32407  
(904) 235-3980  
Daily: 9 to 6

**Scuba Shop**  
348 Miracle Strip Parkway #19  
Fort Walton Beach 32548  
(904) 243-1600 ext. 243-3373  
Sunday-Friday: 9 to 5  
Saturday: 8 to 8

**Scuba-Ski Inc.**  
118 9th St., South  
Naples 33940  
(813) 262-7389  
Monday-Saturday: 10 to 6

**Scubaworld of Tampa Inc.**  
7010 Sheldon Rd., Suite 500  
Tampa 33615  
(813) 987-1089

**Sea Center Dive Shop**  
M.M. 29½ R. U.S. 1  
Big Pine Key 33043  
(305) 872-2319  
Daily: 8 to 6

**Skipper's Diving Center**  
408 E. Wright St.  
Pensacola 32501  
(904) 434-0827  
Summer/Daily: 9 to 6  
Winter/Closed Sunday

**Vortex Springs**  
Route 2, Box 18A  
Ponce de Leon 32455  
(904) 836-4979  
Monday-Thursday: 7:30 to 5  
Friday-Sunday: 7 to 7

## GEORGIA

**Charbon's Specialty Sports**  
850 Hawthorne Ave.  
Athens 30606  
(404) 548-7225  
Saturday & Wednesday: 9:30 to 6  
Thursday & Friday: 9:30 to 8

**Dive, Dive... Dive...**  
Gwinnett Mall Corners Shopping Ctr.  
2131 Pleasant Hill Rd.  
Duluth 30136  
(404) 476-7833  
Monday-Saturday: 10 to 7  
Closed Sunday

**Diving Locker/Ski Chalet**  
74 W. Montgomery Cross Rd.  
Savannah 31406  
(912) 927-6603 or 6604  
Monday-Friday: 10 to 6  
Saturday: 10 to 5

**Garrard Dive Educators, Ltd.**  
2555 Delk Rd.  
Marietta 30067  
(404) 984-0382  
Monday-Saturday: 10 to 9

**Garrard Dive Educators II, Inc.**  
440 Barrett Parkway, Suite 33  
Kennesaw 30144  
(404) 425-9101  
Monday-Saturday: 10 to 9

**Planet Ocean Scuba Center**  
Windsor Village Shopping Center  
Columbus 31909  
(404) 563-8675  
Monday-Friday: 10 to 6:30  
Saturday: 10 to 5

## HAWAII

**Aloha Dive Shop**  
Koko Marina Shopping Center  
Honolulu, Oahu 96825  
(808) 395-8882, 5922  
Daily: 8 to 5:30

**Central Pacific Divers**  
780 Front St.  
Lahaina, Maui 96761  
(808) 861-4661  
Daily: 7 to 9

**Fair Wind, Inc.**  
78-7128 Kaleopapa Rd.  
Kailua-Kona 96740  
(808) 322-2788  
Daily: 7:30 to 5

**Kohala Divers, Ltd.**  
P.O. Box 4935  
Kawaihae 96743  
(808) 862-7774  
Daily: 8 to 5

**Kona Coast Skin Diver Ltd.**  
75-5814 Palani Rd.  
Kailua Kona 96740  
(808) 329-8602  
Daily including holidays: 7 to 6

**Lahaina Divers**  
162 Lahainulana Rd.  
Lahaina, Maui 96761  
(808) 881-4505  
Daily: 8 to 9:30

**Ocean Activities Center**  
3750 Wailea Alanui D2  
Wailea, Maui 96753  
(808) 879-4485  
Daily: 9 to 6

**Ocean Adventures**  
406 Kam Hwy.  
Paoli City, Oahu 96782  
(808) 487-9060  
Monday-Saturday: 8 to 6  
Sunday: 8 to 4  
Closed Wednesday

**Rainbow Divers**  
1652 Wilkiana Dr.  
Wailua, Oahu 96786  
(808) 622-4532  
Monday-Friday: 9 to 6  
Sat. & Sun.: 8 to 6

**See Sage**  
4-1378 Kuhio Hwy.  
Kapa, Kauai 96746  
(808) 822-3841  
Daily including holidays: 8:30 to 5

## IDAHO

**The Scuba Diving Co.**  
219 W. 37th St.  
Boise 83714  
(208) 343-4470  
Daily: 9:30 to 6:30

**ILLINOIS**

**Anchor International Inc.**  
315 W. Ogden Ave.  
Westmont 60559  
(312) 971-1060  
Monday-Friday: 12 to 9  
Saturday: 10 to 5, Sunday: 10 to 3

**Anchor International**  
1790 Algonquin Rd.  
Arlington Heights 60005  
(312) 253-1960  
Mon., Tues., Thurs., Fri.: 5 to 9

**The Scuba Shop, Inc.**  
800 Roosevelt Rd., Bldg. D-104  
Glau Ellyn 60137  
(312) 856-4485

## IOWA

**Dubuque Yacht Basin**  
1630 E. 16th St.  
Dubuque 52001  
(319) 556-7708  
Monday-Friday: 10 to 8  
Saturday: 10 to 3

**Iowa State Skin Diving Schools, Inc.**  
West University Plaza  
7500 W. University Ave., Suite C  
Des Moines 50311  
(515) 255-8999  
Monday-Friday: 10 to 7  
Saturday: 10 to 8

**INDIANA**

**Divers Supply Company, Inc.**  
3301 N. Illinois St.  
Indianapolis 46208  
(317) 923-5335  
Mon., Wed. & Fri.: 9 to 7:30  
Tues. & Thurs.: 9 to 5:30  
Saturday: 9 to 5

**Divers World**  
1271 E. Morgan Ave.  
Evansville 47711  
(812) 423-2738  
Monday-Friday: 10 to 6  
Saturday: 8 to 5

**DNP Diving, Inc.**  
1830 Erie Ave.  
Logansport 46947  
(219) 753-8377  
Monday-Friday: 8 to 4

**Pro Dive Shop**  
3203 Covington Rd.  
Fl. Wayne 46804  
(219) 432-7745  
Mon., Tues., Thurs. & Fri.: 12 to 6  
Saturday: 9 to 1

**KANSAS**

**The Dive Shop**  
7300 W. Frontage Rd.  
Meriam 66204  
(913) 677-3483  
Daily: 10 to 7

**KENTUCKY**

**Divers, Inc.**  
4807 Dixie Hwy.  
Louisville 40218  
(502) 448-7433  
Monday-Friday: 10 to 7  
Saturday: 10 to 5

**Global Adventures**  
2708 Scottsville Rd.  
Bowling Green 42011  
(502) 842-6010  
Daily: 10 to 7

**Laurel Diving Headquarters**  
414 Master St.  
Cordn 40701  
(606) 523-1380  
Hours: 9 to 6

**Lexington Dive Shop**  
838 East High St.  
Lexington 40502  
(606) 266-4703  
Monday-Friday: 11 to 7  
Saturday: 11 to 5

**Louisville Dive Shop**  
2478 Bardstown Rd.  
Louisville 40205  
(502) 458-8427  
Monday-Friday: 11 to 7  
Saturday: 11 to 5

**LOUISIANA**

**Divers Destination of Louisiana**  
199 Mt. Vernon Dr.  
Lafayette 70503  
(318) 964-4768  
Monday-Saturday: 10 to 6

**Houma Watersports**  
3219 W. Main  
Houma 70360  
(504) 879-2900  
Monday-Friday: 10 to 8  
Saturday: 10 to 3

**See Horse Diving Academy**  
5400 Crowder Blvd., Unit "E"  
New Orleans 70127  
(504) 246-6523  
Monday-Friday: 11 to 7  
Saturday: 10 to 6

**Seven Seas**  
633 Oak Villa Blvd.  
Baton Rouge 70815  
(504) 328-1819  
Monday-Saturday: 9:30 to 5:30

**The Water Habitat, Inc.**  
5411 Coliseum Blvd.  
Alexandria 71301  
(318) 443-5075  
Mon., Wed., & Fri.: 10 to 6  
Saturday: 10 to 5

**The Water Habitat, Inc.**  
317 Frost St.  
Leesville 71446  
(504) 238-0709  
Monday-Friday: 10 to 6  
Saturday: 8 to 4

**MAINE**

**Aqua Diving Academy**  
1183 Congress St.  
Portland 04101  
(207) 772-4200  
Monday-Saturday: 10 to 5

**Scuba Diver's Paradise**  
RFD #3, Turner Rd., Box 817  
Auburn 04210  
(207) 782-7739  
Monday-Friday: 2 to 9  
Saturday: 7 to 6

**MARYLAND**

**Bethany Water Sports**  
3220 Corporate Ct., Suite G  
Elliott City 21043  
(301) 461-DIVE  
Monday-Friday: 12 to 7  
Saturday: 11 to 5

**Divers Den Inc.**  
8105 Harford Rd.  
Baltimore 21234  
(301) 668-6868  
Mon., Tues., Thurs. & Fri.: 9:30 to 9  
Wed. & Sat.: 9:30 to 5

**The Scuba Hut, Inc.**  
139 Delaware Ave.  
Glen Burnie 21061  
(301) 761-4520  
Mon., Wed. & Fri.: 10 to 8  
Tuesday & Saturday: 10 to 6

**Tide Water Aquatics**  
333 Forest Dr.  
Annapolis 21403  
(301) 288-1992  
Monday-Friday: 12 to 7  
Saturday: 11 to 5

**MASSACHUSETTS**

**Aquarius Diving Center Inc.**  
3330 Cranberry Hwy.  
Buzzards Bay 02532  
(617) 759-DIVE  
Monday-Friday: 10 to 7  
Saturday: 8 to 4

**Merrimack Aquatic Center**  
171 Merrimack St.  
Methuen 01844  
(617) 688-6566  
Monday-Friday: 11 to 7  
Saturday: 12 to 4

**Ultramarine Divers**  
94 Commonwealth Ave.  
Concord 01742  
(617) 369-1154  
Daily: 10 to 8

**United Divers, Inc.**  
59 Washington St.  
Somerville 02143  
(617) 666-0410  
Monday-Friday: 10 to 8  
Saturday: 9 to 6  
Summer/Sunday: 9 to 4

**Whaling City Diving Center**  
448 Popes Island Road, Rt. 8  
New Bedford 02740  
(617) 992-2662  
Monday-Friday: 10 to 8  
Saturday: 9 to 8  
Summer/Sunday: 9 to 4

**MICHIGAN**

**Divers Incorporated**  
2382 Washburn Ave.  
Ann Arbor 48104  
(313) 971-7771  
Monday-Friday: 10 to 8  
Saturday: 10 to 5  
Closed Tuesday & Sunday

**The Dive Shop**  
G 4155 Fenton Rd.  
Burton 48529  
(313) 767-DIVE  
Monday-Saturday: 9 to 8  
Late Appointments Available

**The Dive Site**  
1622 Bloomfield  
Kalamazoo 49001  
(616) 345-2060  
Monday-Friday: 10 to 7  
Saturday: 1 to 5

**Recreational Diving Systems**  
4424 N. Woodward  
Royal Oak 48072  
(313) 548-0303  
Monday-Friday: 10 to 7  
Saturday: 10 to 5

**Scuba North, Inc.**  
1580 W. Bayshore Dr.  
Traverse City 49684  
(616) 947-2520  
Monday-Thursday: 9 to 6  
Friday-Saturday: 9 to 7  
Sunday: 10 to 5  
(Winter) Mon.-Sat.: 10 to 6

**The Scuba Shack**  
9982 W. Higgins Lake Dr.  
Higgins Lake 48627  
(517) 821-6477  
(Summer) Monday-Friday: 9 to 5  
Saturday & Sunday: 8 to 8

**Seaquatics, Inc.**  
879 S. Saginaw Rd.  
Midland 48640  
(517) 835-6391  
Monday-Friday: 10 to 6  
Saturday: 10 to 5

**Skamt Sport**  
5055 Plainfield N.E.  
Grand Rapids 49505  
(616) 364-8418  
Monday, Wednesday, Friday: 10 to 9  
Tuesday, Thursday, Saturday: 10 to 6

**Tom & Jerry's Skin & Scuba Shop**  
20318 Van Born Ave.  
Dearborn Heights 48125  
(313) 278-1124  
Monday-Friday: 11 to 7  
Saturday: 11 to 5

**ZZ Under Water World, Inc.**  
1806 E. Michigan Ave.  
Lansing 48912  
(517) 485-3894  
Monday-Friday: 10 to 7  
Saturday: 10 to 5

**MINNESOTA**

**Central Minnesota Divers**  
102 E. St. Germain  
St. Cloud 56301  
(612) 252-7572  
Monday-Friday: 10 to 7  
Saturday: 9 to 5

**Club Scuba East**  
3035 White Bear Ave.  
Maplewood 55109  
(612) 770-5555  
Monday-Friday: 10 to 8  
Saturday: 10 to 5  
(Summer) Sunday: 9 to 1

**Club Scuba West**  
1300 E. Wayzata Blvd.  
Wayzata 55391  
(612) 473-4268  
Monday-Friday: 10 to 8  
Saturday: 10 to 5  
(Summer) Sunday: 9 to 1

**Fantasia Scuba**  
3429 East Highway 13  
Burnsville 55337  
(612) 890-DIVE (890-3483)  
Monday-Friday: 10 to 8  
Saturday & Sunday: 10 to 6

**MISSISSIPPI**

**Out and Under**  
1200 Roebuck Dr.  
Meridian 39301  
(601) 693-5027  
Monday-Saturday: 10 to 8

**Skippers Diving**  
4441 N. State  
Jackson 39206  
(801) 362-6969  
Monday-Friday: 10 to 6  
Saturday: 10 to 5

**South Mississippi Dive & Sport Shop**  
Route 10, Box 418, Hwy. 49  
Gulfport 39503  
(601) 832-3828  
Monday-Saturday: 10 to 7

**MISSOURI**

**Academy of Scuba Training, Inc.**  
437 Broadway  
Cape Girardeau 63701  
(314) 335-0756  
Monday-Friday: 9 to 6  
Saturday: 9 to 5

**Aquasports, Inc.**  
5601 S. Campbell  
Springfield 65807  
(417) 863-5151  
Monday-Friday: 9 to 7  
Saturday: 9 to 5  
Closed Sunday

**Divers Village**  
P.O. Box 329, Lake Rd. West 20  
Lake Ozark 65049  
(314) 365-1222  
Daily: 9 to 6

**John The Diver, Springfield**  
2421 South Campbell  
Springfield 65807  
(417) 881-0202  
Monday-Friday: Noon to 8  
Saturday: 10 to 5

**Table Rock State Park Marina**  
S.R. 1, Box 91  
Branson 65616  
(417) 334-3069  
Daily: sunrise to sunset  
Nov. through Feb. open by appt.

**The Dive Shop North**  
8135 North Oak  
Kansas City 64118  
(816) 436-5448  
Monday-Friday: 10 to 7  
Saturday: 10 to 5

**NEBRASKA**

**Big Mac Scuba & Sail**  
4711 Huntington St., Suite #1  
Lincoln 68503  
(402) 466-8404  
Wednesday-Saturday: 10 to 5  
Sunday: 11 to 5

**Divester**  
2322 North 72nd St.  
Omaha 68134  
(402) 391-1155  
Monday-Thursday: 12 to 7  
Fri., Sat., Sun.: 12 to 5

**NEVADA**

**Desert Divers Supply**  
5720 E. Charleston Blvd.  
Las Vegas 89122  
(702) 438-1000  
Monday-Friday: 9 to 8  
Saturday & Sunday: 8 to 8

**Sierra Dive Co.**  
104 E. Grove St.  
Reno 89502  
(702) 825-2147  
Mon., Tues., Thurs. & Fri.: 9 to 6  
Wednesday: 9 to 9:30  
Saturday: 10 to 5

**NEW HAMPSHIRE**

**Atlantic Aqua Sports**  
522 Seagore Rd.  
Rye 03870  
(603) 438-4443  
Daily: 8 to 5, Closed Tues.

**NEW JERSEY**

**Cedar Grove Divers Supply**  
492 Pompton Ave., Route 23  
Cedar Grove 07009  
(201) 857-1748  
Tuesday-Friday: 12 to 9  
Saturday: 10 to 5  
Closed Sunday & Monday

**Chatham Water Sports**  
8 North Passaic Ave.  
Chatham 07928  
(201) 635-5313  
(201) 775-8292  
Monday-Friday: 12 to 9  
Saturday: 10 to 5

**Professional Divers, Inc.**  
70 Hwy. 35  
Neptune City 07753  
(201) 775-8292  
Monday-Friday: 11 to 8  
Saturday: 10 to 6  
Sunday (Summer): 9 to 1

**Underwater Sports Inc.**  
2017 17th St.  
Rochelle Park 07662  
(201) 843-3340  
Monday: 10 to 7  
Tues.-Fri.: 10 to 9  
Sat.: 10 to 6

**Whitehouse Aquatic Center**  
Box 97-C, Hwy. 22 West  
Whitehouse Station 08889  
(201) 534-4090  
Monday-Saturday: 10 to 8  
Sunday: 10 to 2

**NEW MEXICO**

**New Mexico School of Diving**  
4010 E. Main St.  
Farmington 87401  
(505) 325-2728  
Monday-Saturday: 10 to 8

**New Mexico Scuba Schools, Inc.**  
11200 Montgomery NE  
Albuquerque 87111  
(505) 292-7960  
Monday-Saturday: 10 to 7

**NEW YORK**

**Cougar Sports**  
917 Sawmill River Rd.  
Ardley 10502  
(914) 693-8877  
Monday-Wednesday: 10 to 6  
Thursday: 10 to 7, Friday: 10 to 8  
Saturday: 10 to 5

**King County Divers Corp.**  
2417 Avenue U  
Brooklyn 11229  
(718) 648-4232 & 934-4153  
Monday-Friday: 12 to 9  
Saturday: 10 to 9

**Niagara Scuba Sports**  
2048 Niagara St.  
Buffalo 14207  
(716) 875-6528  
Mon., Tues., Thurs. & Fri.: 9 to 8:30  
Wed. & Sat.: 9 to 5:30  
Sunday (June through September): 9 to 11:30

**National Aquatic Service, Inc.**  
1732 Erie Blvd. East  
Syracuse 13210  
(315) 479-5544  
Monday-Friday: 9 to 5  
Saturday: 9 to 4

**Pan Aqua Diving**  
166 W. 76th St.  
New York 10023  
(212) 496-2267  
Sunday-Friday: 12 to 7  
Saturday: 10 to 7

**Suffolk Diving Center**  
58 Larksfield Rd.  
E. Northport 11731  
(516) 261-4388  
Monday-Thursday: 10 to 6  
Fri.: 10 to 8, Sat.: 10 to 8  
Sunday: 10 to 3

**Swim King Dive Shop**  
Rte. 25A  
Rocky Point 11778  
(516) 744-7707  
Monday-Friday: 10 to 7  
Saturday: 8 to 8  
Sunday: 8 to 12

**NORTH CAROLINA**

**Blue Dolphin Dive Shop**  
1006 National Hwy.  
Thomasville 27360  
(819) 475-2516  
Monday-Thursday: 10 to 7  
Friday: 10 to 9  
Saturday: 8 to 8

## Reef & Ridge Sports

532 E. Chelmer St.  
CITY 27511  
(919) 467-3831  
Monday-Friday: 11 to 8:30  
Saturday: 11 to 3

## Rum Runner Dive Shop Inc.

2145 East 5th St.  
Greenville 27858  
(919) 758-1444  
Monday-Friday: 10 to 5

## Sport Divers Inc.

2600 South Blvd.  
Charlotte 28208  
(704) 525-9234  
Monday-Saturday: 9 to 8:30

## OHIO

### Buckeye Diving School

48 Warrensville Center Rd.  
Bedford 44146  
(216) 439-3677  
Mon., Wed. & Fri.: 12 to 8  
Tues. & Thurs.: 11 to 6  
Saturday: 10 to 5:30

### C & J Scuba

5825 North Dixie Dr.  
Dayton 45414  
(513) 890-6900  
Monday-Thursday: 10 to 7  
Friday: 10 to 9  
Saturday: 10 to 5

### Dale's Diving Shop Inc.

302 Meigs St.  
Sandusky 44870  
(419) 625-4134  
10:30 to 5:30  
Closed Wednesday and Sunday

### Dive Inc.

428 Park Ave. West  
Manfield 44908  
(419) 524-2484  
Monday-Thursday: 12 to 7  
Saturday: 10 to 5

### Ke-Puka-Wai Dive Shop

1508 Whipple Ave. N.W.  
Canton 44708  
(216) 478-2511  
Monday & Thursday: 11 to 9  
Tues., Wed. & Fri.: 11 to 6  
Saturday: 10 to 5

### Underwater Enterprises

832 Lake Ave.  
Ellyria 40335  
(216) 323-9542  
Monday-Friday: 2 to 9  
Saturday: 9 to 8  
Sunday: 9 to 11

### The Waterline, Inc.

961 Dublin Granville Rd.  
Columbus 43229  
(614) 436-5004  
Monday-Friday: 11 to 7  
Saturday: 12 to 5  
Closed Sunday

## OKLAHOMA

### Chalet Sports

2822 Country Club Dr. West  
Oklahoma City 73116  
(805) 840-1616  
Monday-Saturday: 10 to 6

## OREGON

### Aquatic Sports & Scuba Center

10803 SW. Barbur Blvd.  
Portland 97219  
(503) 245-4991  
Monday-Friday: 10 to 7  
Saturday: 10 to 4

### Northwest Divers Supply

911 Newmark  
North Bend 97459  
(503) 758-3483  
Monday-Saturday: 9 to 8  
Sunday: 9 to 1

### Tri-West Diving School

13804 S.E. Powell  
Portland 97236  
(503) 761-5435  
Monday-Friday: 10 to 8  
Saturday: 10 to 5

## PENNSYLVANIA

### Aquatic Horizons

1501 N. George St.  
York 17401  
(717) 848-6908  
Monday-Friday: 8 to 8  
Saturday: 8 to 4

### B & B Marine Specialties

Hillville-Bessmer Rd.  
Hillville 18132  
(412) 667-9448  
Daily: 9 to 7

### Bainbridge Dive Shop

R.D. #1, Box 251  
Bainbridge 17502  
(717) 426-2114  
Daily: 9 to 7

### D.J. Hydro Sports

3246 Peachy St.  
 Erie 16502  
(814) 455-5861  
Monday-Friday: 9 to 6:30  
Saturday: 9 to 4:30

### Professional Diving Services

1135 Pittsburg  
Springdale 15144  
(412) 274-7719  
Monday-Saturday: 9 to 9

## RHODE ISLAND

### Providence Aquatic Center

209 Elmwood Ave.  
Providence 02907  
(401) 274-4482  
Monday-Friday: 10 to 8  
Saturday: 9 to 8

### Viking Dive Shop

10 E. Main Rd.  
Middletown 02840  
(401) 847-4179  
Sun.-Friday: 10 to 6  
Sat.: 10 to 5:30

## SOUTH CAROLINA

### Neptune Dive & Ski, Inc.

133 Georgia Ave.  
North Augusta 29841  
(803) 279-2797  
Monday-Saturday: 10:30 to 6

### Waterree Diving School & Equipment

202 Fernandina Rd.  
Columbia 29210  
(803) 731-9344  
Monday-Friday: 10:30 to 8:30  
Saturday: 10 to 6

## SOUTH DAKOTA

### Donovane Hobby & Scuba Center

1908 W. 42nd St.  
Sioux Falls 57105  
(605) 338-6945  
Mon., Wed., Fri.: 9 to 9  
Tuesday & Thursday: 9 to 6  
Saturday: 9 to 4:30

## TENNESSEE

### Adventure Swim & Scuba

124 Northcross Dr.  
Knoxville 37919  
(615) 584-3483, (Pool #691-2525)  
Monday-Saturday: 11 to 6  
Closed Sunday

### Diving Adventures

3048 Nolensville Rd.  
Nashville 37211  
(615) 333-DIVE(3483)  
Monday-Saturday: 9 to 6

### Perimeter Scuba Training Center

1215 Lee Highway  
Chattanooga 37421  
(615) 899-1008  
Monday-Saturday: 10 to 7

## TEXAS

### American Diving

215 Highway 100  
Atrium Professional Bldg.  
Port Isabel 78597  
1-800-634-5989, (512) 761-2030  
Seven Days: 10 to 7

### Aquaguests Dive Shop

4099 B. Calder Ave.  
Beaumont 77708  
(409) 832-0254  
Monday-Saturday: 9 to 6

## Atlantis Scuba Center

17352 N.W. Freeway  
Cypress 77040  
(713) 697-2822 (69-SCUBA)  
Monday-Friday: 10 to 7  
Saturday: 10 to 4

## Copeland's

4041 S. Pedra Island Dr.  
Corpus Christi 78411  
(512) 854-1135  
Monday-Friday: 10 to 7  
Saturday: 9 to 5

## Diver's Depot

720 South St.  
Nacogdoches 75961  
(409) 564-9622  
Monday-Saturday: 10 to 6

## Lone Star Scuba

2815 Alta Mare Dr.  
Fort Worth 76116  
(817) 377-DIVE (3483)  
Monday-Saturday: 10 to 6

## Pro Scuba Supply

341 So. Bonner  
Tyler 75702  
(214) 593-6254  
Monday-Friday: 9 to 6  
Saturday: 9 to 4

## School of Scuba

942 Walnut  
Aubrey 75801  
(817) 673-2949  
Monday-Saturday: 10 to 6:30

## Scuba Plus

1404 W. Adama  
Temple 76701  
(817) 773-4220  
Monday-Saturday: 10 to 6

## Scuba West

586 Lincoln Sp.  
Arlington 76010  
(817) 277-1122  
Monday-Saturday: 10 to 6

## Scuba West

5500 Greenville, Suite 901  
Dallas 75205  
(214) 750-6900  
Monday-Saturday: 10 to 6

## Scuba West

9241 Skillman #104  
Dallas 75243  
(214) 348-8884  
Monday-Saturday: 10 to 6

## Scuba West

14902 Preston Rd., Suite 412  
Dallas 75240  
(214) 980-1300  
Monday-Saturday: 10 to 6

## Scuba West

2552 Joe Field Rd.  
Dallas 75229  
(214) 241-2900  
Monday-Saturday: 10 to 6

## Trident Diving Academy

5215 Sanger  
Waco 76710  
(817) 772-6674  
Monday-Saturday: 10 to 6  
Summer: 7 days

## Trident Diving Equipment

2110 West Ave.  
San Antonio 78201  
(512) 734-7442  
Monday-Saturday: 10 to 7

## UTAH

### Dive Utah

3577 South Main  
Salt Lake City 84115  
(801) 288-3737  
Monday-Friday: 10 to 7  
Saturday: 11 to 4

### Scuba Utah

1842 East 7000 South  
Salt Lake City 84121  
(801) 942-2100  
Monday-Friday: 10 to 8  
Saturday: 10 to 4

## VIRGINIA

### Lynnhaven Dive Center

413 Great Neck Rd.  
Virginia Beach 23454  
(804) 481-7949  
Monday-Friday: 9 to 8  
Saturday: 9 to 6  
Sunday: 9 to 4

## The Ocean Window

667 "G" Back Lick Rd.  
Springfield 22150  
(703) 440-9771  
Monday-Thursday: 12 to 9  
Friday: 12 to 7  
Saturday: 10 to 6

## WASHINGTON

### Bellingham Dive & Travel

2720 W. Maplewood  
Bellingham 98225  
(206) 734-1770  
Call for store hours and apps.

### Chelam Divers

1210 W. Woodin Ave.  
Chelan 98816  
(509) 682-4468  
Daily: 9 to 5

### Northwest Divers Inc.

4615 N. Pearl  
Tacoma 98407  
(206) 752-3973  
Monday-Saturday: 10 to 6

### Scuba Center of Spokane

N. 3607 Division St.  
Spokane 99207  
(509) 326-4653  
Monday-Saturday: 10 to 6

### Silent World Divers

13600 N.E. 20th Bldg. F, Suite A  
Bellevue 98005  
(206) 747-8842  
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Saturday: 9 to 8

### Sound Dive Center

990 Sylvan Way  
Bremerton 98310  
(206) 373-8141  
Monday-Friday: 10 to 6  
Saturday: 9 to 6  
Sunday (April to Sept): 11:30 to 3

## WISCONSIN

### Aqua Center, Inc.

828 Bellevue St.  
Green Bay 54302  
(414) 468-8080  
Monday: 10 to 7  
Tuesday-Thursday: 10 to 5  
Friday: 10 to 9  
Saturday: 10 to 2

### Bennett Academy of Ski & Scuba

6509 W. North Ave.  
Wauwatosa 53213  
(414) 258-6440  
Mon., Tues. & Sat.: 10 to 6  
Wed., Thurs. & Fri.: 10 to 9

### Central Wisconsin Diving Academy

8751 Hwy. 13 S.  
Wisconsin Rapids 54494  
(715) 325-3888  
Monday-Thursday: 9 to 5  
Friday: 9 to 5  
Saturday: 9 to 5

### Down Under Diving, Inc.

3405 Douglas Ave.  
Racine 53402  
(414) 639-9344  
Mon.-Wed., & Fri.: 10 to 6  
Thursday: 10 to 8  
Saturday: 9 to 5

## CARIBBEAN

### Don Foster's Dive Grand Cayman

P.O. Box 151  
Grand Cayman, Cayman Islands B.W.I.  
(809) 94-9238  
Monday-Thursday: 9 to 5  
Friday: 9 to 5  
Saturday: 9 to 5

### Kaiko Dive Center

P.O. Box 58  
Port-Au-Prince, Haiti  
011-5-09125  
Daily: 9 to 5

### "La Cueva Submarina Inc."

"Galerías" - Segundo Nivel  
Ave. Estación #19 - Ave. Juan  
González #18, P.O. Box 151  
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Anguilla, B.W.I.  
(809) 497-2798, 2462  
Daily: 9 to 5

**UNEXSO-Underwater**

**Explorers Society**  
PO Box F2433  
Freeport, Bahamas  
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Daily: 8 to 5

**Virgin Islands Diving**

**Schools, Inc.**  
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St. Thomas, V.I. 00801-3400  
(339) 774-9687, 7368  
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Quebec City, Quebec G1R 1A8  
(418) 525-8893  
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(604) 986-0302

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Thursday, Friday: 10 to 8  
Saturday: 10 to 8

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(709) 576-4587

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**Seafun Divers Ltd.**

1781 Island Hwy.  
Campbell River, B.C. V9W 2A8  
(604) 287-3622  
Monday-Saturday: 9 to 5:30

**Seafun Divers Ltd.**

300 Terminal Ave.  
Nanaimo, B.C.  
(604) 754-4813

Monday-Saturday: 9 to 8

**Skin & Scuba Schools**

#7, 3601-19th St. N.E.  
Calgary, Alberta T2E 6S8  
(403) 230-2365

Tuesday-Saturday: 10 to 6

**Sea & Ski Lethbridge**

305 15th St. South  
Lethbridge, Alberta T1J 4K1  
(403) 327-6100  
Mon., Tues., Wed., Sat.: 10 to 5:30  
Thurs. & Fri.: 10 to 9

**FOREIGN****CENTRAL AMERICA****St. George's Lodge**

Box 625  
Belize City, Belize C.A.  
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Saturday: 10 to 3

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**SAUDI ARABIA****Desert Divers**

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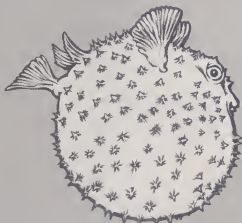
R. Camargo #26  
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**SOUTH PACIFIC****Dive Bougainville Pty., Ltd.**

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Alofi, Niue Island  
Phone: 102  
Daily: 6 to 9



# C u r a c a o

## Forgotten Gem of the Antilles

BY SUSAN SPECK

**A** centuries old shipwreck lies nestled in mystique among coral mushrooms which blanket the reef beside it. Every color of the rainbow shimmers across the coral, and one might expect to sight a hobbit darting into his hole.

Like the hobbit, the residents here are different. They live in a world all their own. Some have pastel-painted faces while their neighbors have polka-dotted ones. Others wear stripes and some have a lacy appearance. Many have gorgeous bodies made up like butterfly wings, yet others have 10 legs and are decorated in spiny attire. Some, disguised as flower gardens sprinkled among the rocks, will appear and disappear at whim. There are also larger, more fearsome looking creatures which

move anonymously in the shadows. While on the bottom, still others lie motionless turning an array of colors to mask their shyness.

A page out of Tolkien's *Lord of the Rings*? No, this is the underwater world of Curacao.

In the Netherland Antilles, 38 miles north of the Venezuelan coast, we strolled down streets lined with 300-year-old mansions, indulging in thoughts of Curacao's early days.

Discovered in 1499 by Alonzo de Ojeda, a lieutenant serving with Christopher Columbus, the Spanish had settled on Curacao by 1530. In 1634, the Dutch captured the island and founded a settlement. In 1800, Curacao became a British Protectorate. It was returned to the Dutch in 1802; only to be recaptured by the British in 1807. The island was finally regained by the Dutch by the Treaty of Paris in 1815.

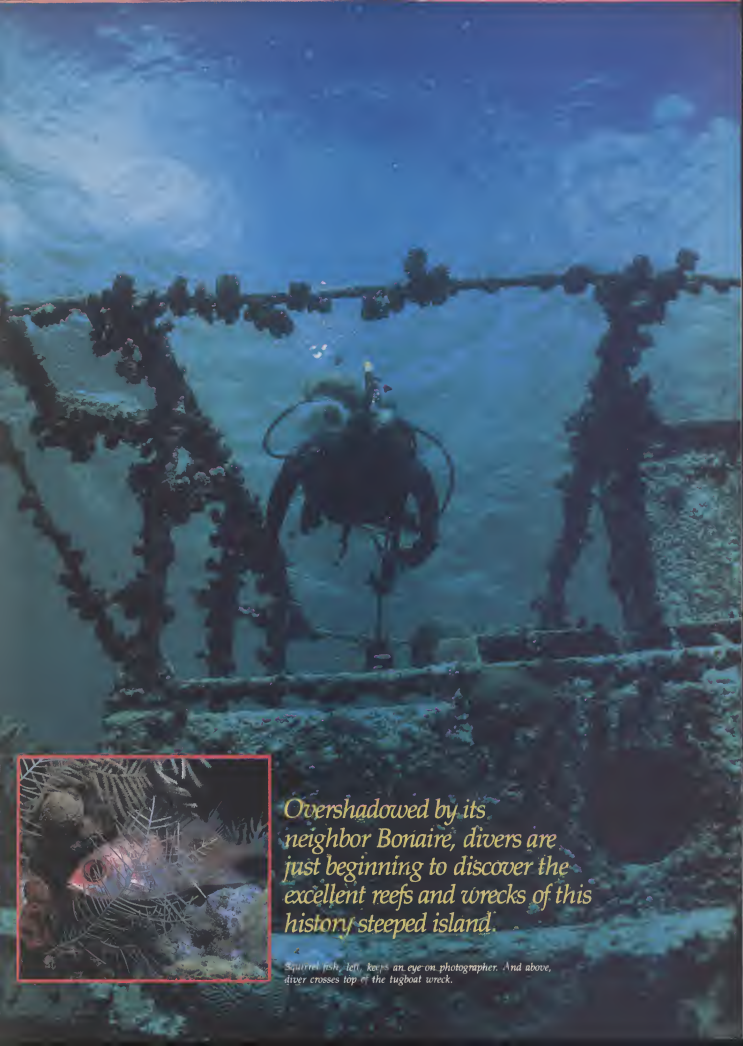
Today, some 40 to 50 nationalities are represented in Curacao's cosmopolitan

population of 160,000. African culture was introduced with the slave trade. The heavy influx of Spanish, Portuguese and Jewish emigres during the years of the Inquisition contributed to Curacao's European charm. These ethnic influences, and others, can be readily seen today.

Curacao will make you believe in magic. Willemstad, the capital, is a typical Dutch town seemingly transported intact from Amsterdam to the warm Caribbean. Only magic can explain the language you hear spoken. At first it sounds Dutch. Then you hear Spanish. If you're good, you'll pick up a few words of English, Portuguese and even some African. It's called Papiamentu and magically, you don't have to speak a word of it to have a good time. English will stand you in good stead almost everywhere you go, as will Dutch or Spanish.

Enchanting Willemstad is the largest city in this, the largest island in the

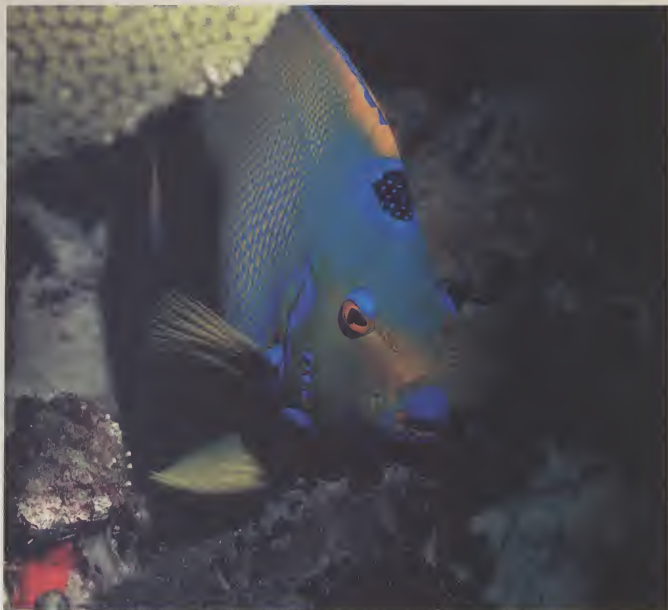
*Susan Speck is the owner of Divers West in Pasadena, Calif. This is her first contribution to Diving & Snorkeling.*



*Overshadowed by its neighbor Bonaire, divers are just beginning to discover the excellent reefs and wrecks of this history steeped island.*



*Squirrel fish, left, keeps an eye on photographer. And above, diver crosses top of the tugboat wreck.*



*Queen angels are frequently seen in Curacao's waters.*

*In 30 to 100 feet of water with 150-foot plus visibility, we slipped beneath the surface.*

Netherland Antilles. It is divided into two parts and both are delightful. Punda, with its storybook houses and charming shops, sits on one side of Curacao's bustling harbor. Across the water lies Otrabanda, which literally means "the other side."

Punda is one of the shopping meccas of the Caribbean, offering a wide array of low-duty bargains. One of the nicest things about Punda and Otrabanda is the method used to get from one to the other. You can take the long way around, a drive through Otrabanda, with sunbeams sparkling off St. Anna Bay, but most folks stroll across Queen Emma, a totally wonderful, 700-foot, swaying pedestrian pontoon bridge. "Her Highness" is a real swinger, opening and closing to harbor traffic. When the bridge is closed due to ship traffic, a free ferry chugs you across the bay.

With shopping, sports, dining, legal gambling and leisurely sunbathing on white sands, one could never run out of things to do. Some of the oldest buildings in the New World stand on this island and the museums in Willemstad hold many historic treasures. But we discovered her finest treasures lie hidden beneath her aquamarine waters.

In 30 to 100 feet of water with 150-foot plus visibility, we slipped beneath the surface. Magnificent walls start at about 40 feet and drop sharply several hundred feet. The density of growth on these walls is unique. We saw hard coral, black coral trees, tube and basket sponges and swarms of tropical fish. Unlike some other dive locations where diver pressure is great, the coral here is unbroken and the curiosity of the marine life is overwhelming. We felt as if we were the first divers these creatures

had ever seen. While tropical fish ate trustingly from our hands, fantastically displayed feather duster worms and spiral worms seemed to actually wait and pose to be photographed. Once approached, these Christmas tree shaped worms will usually disappear into the corals.

Lobsters and a variety of shrimps and crabs stood at the entrances of their coral homes watching patiently, as we slowly passed through the neighborhood. To sight an occasional turtle is not rare in these waters.

Besides the plunging walls and lush coral reefs, Curacao's waters offer still more. One site is known as the *Bus Stop*. It is an artificial reef comprised of cars, buses and barges which have been sunk over the last 15 years. A variety of gorgonians, corals and sponges cover the wreckage. The reef is in 60 feet of water and lies 50 yards offshore.

Another interesting site is the wreck of a tugboat. The coral covered tug lies completely intact, sitting upright in 20 feet of water. Every inch of the boat is covered with a variety of sponges and corals. The marine growth has attracted a profusion of fish including elegant queen angels, striped sergeant majors, spotted coney, filefish, trumpetfish, butterfly fish, and many more. There are also tiny blennys which live in the corals. These fish are so small they are easily missed. Residing in holes only a half-inch across, their tiny faces have a cartoon-like appearance. As we continued to explore this wreck, we were greeted by a great barracuda. This magnificent, sleek, six-foot animal moved through the water so effortlessly, it was difficult to discern any fin movement.

Swimming away from the tugboat toward shore, approximately 100 yards away, is the entrance of Caracas Bay. A

## Travel Tips



Curacao is served by American, ALM and Eastern airlines direct from New York and Miami. The peak travel period is mid-December to April. American's off-season excursion fare is \$498 from New York's JFK airport. Hotel rates drop appreciably during the off season. The weather is tropical with temperatures averaging 80 degrees year-round. There is no rainy season and steady trade winds provide cooling breezes. Curacao is outside the hurricane belt. Proof of citizenship is required and can be in the form of a passport, birth certificate or voter's registration card.

Several hotels offer diving packages. Under the Sun at P.O. Box 772145, Steamboat Springs, CO 80477. Tel. 800-782-5247 or 303-879-4504 in Colorado books trips to the Holiday Beach Hotel & Casino

in Willemstad. A 7-night, 8-day trip including airfare is \$698 per person, double occupancy from JFK in New York and \$643 from Miami. The price includes hotel with breakfast and 6 guided boat dives plus a night dive. Additional dives can be arranged with Underwater Curacao which handles the diving at the Seaquarium. Under the Sun also offers a package at the Curacao Caribbean Hotel.

A 7-night, 8-day trip including airfare is \$794 from JFK and \$739 from Miami per person double occupancy. Presently the policy at Seascape Diving which is located at the hotel is 6 days of unlimited shore, boat and night diving are included in the package. This is subject to change.

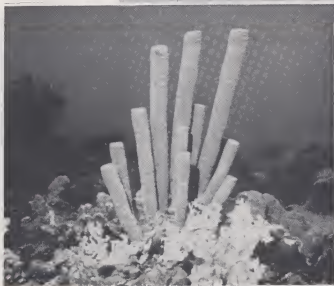
The Ocean Connection at 16730 El Camino Real, Houston, TX 77062, tel. 800-331-2458 offers a package at the Coral Cliff Hotel on Santa Manta Bay. The 7-night, 8-day trip includes hotel with breakfast and dinner and a free shuttle bus to town and 2 boat dives per day and unlimited shore dives for \$622 per person, double occupancy. Special airfare arrangements can be made.

ITR in New York, tel. 800-451-9376 offers a dive package at the Princess Beach Hotel in Willemstad. The 7-night, 8-day trip includes hotel with breakfast, and a 12-dive plan for \$609 per person, double occupancy. An 8-dive plan is \$529.

All the above packages are in effect through mid-December.

For additional information contact the Curacao Tourist Board, 400 Madison Ave., Suite 311, New York, NY 10017, 800-782-5247.

S



The Roxy Theatre in Willemstad, above, and a purple tube sponge.



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mooring and port for Caribbean oil tankers and cruise ships, the bay features one of the largest and oldest piers in the world. Talk about pier diving! Resembling ancient Roman ruins, this structure is one of a kind. The nearly 200-year-old pilings are home to an abundance of marine inhabitants. Rumor has it that if one dug in the right places under these pilings, artifacts dating to the 1500's could be found. Before ever considering this dive, one should definitely know the schedules of the cruise ships.

One of Curacao's not so lucky ships now lies on the sandy bottom of the ocean floor. Completely intact lying upright in 100 feet of water sits the *Superior Producer*. The Venezuelan freighter, carrying a cargo of clothing and Rolex watches, ran into heavy seas and capsized in October of 1977. This stunning wreck is what the non-diver would picture when imagining a sunken shipwreck. The hull and mast remain intact with its hatches and holds open. Standing on the bow of the ship, we could see the stern 200 feet away. Although this 200-foot wreck cannot yet be described as coral-encrusted, it is beginning to show the budding growth of numerous small sponges and coral. While scrounging around in the hold of the ship, we recovered old suitcases and many shirts, still in their packages. The shirts were in excellent condition except for small rust spots where the pins had been. Also recovered was an old, World War II pull-down stove. As for the Rolex watches—well, maybe on the next trip.

We could see the sunlight dancing on the surface as we began our ascent. As we rose past the hull and then up past the tall mast, we could barely see the hazy image of the ship, which vanished completely by the time we had reached the surface.



Arrow crab.

**Curacao  
Underwater  
Park**

*Established in 1983, the Curacao Underwater Park extends from the Princess Beach Hotel to the eastern tip of the island and encompasses 1,500 acres. Extending from the beach to the 200-foot depth contour, it includes some of the island's finest coral reefs.*

*In order to properly manage the reef for sustained utilization with minimal impact, park rules prohibit removal of any plant or animal whether dead or alive. Spearfishing is not allowed and boats must tie up to mooring buoys or anchor in sandy areas. Divers are urged not to sit or step on the corals.*

*The park provides guided dive trips, lectures and slide presentations. \$*

Curacao's beautiful waters could be dived daily for years and each day would bring new and exciting discoveries. Her aquamarine waters are a haven for marine creatures, and a paradise for anyone who visits them. \$

*Sea horses are found on Curacao's north shore.*



## BALI

(Continued from page 42)

beaches and a sheer drop-off like Palau's Ngemelis Wall.

This too was a very simple beach dive with remarkably contrasting terrain to either side of the entry cut. I was joined by Lynn Recella of Guam on this adventure and we first explored to the left of the cut.

Spectacular coral is the first thing the diver sees visiting this wall. Huge sea fans, 10 feet across, start in 20 feet of water. The variety is endless. Everything from lacy gorgonians to branching trees of black coral adorn the reef. Barrel and immense platter sponges are also common. The fish life here is plentiful with schools of different species coursing the reef. I spotted an unusual golden crevalle jack swimming along the top of the reef.

There was one disappointing note. Some divers had carved their names into a couple of the large platters sponges. Other than that, the wall was pristine, as a nature reserve should be.

The dive to the right of the cut also offered spectacular coral and the wall was pocked with many small caves and large cuts. Sleep-grouper and bigeye were found in the dark shadows. Here we did see a reef shark cruise by at about 80 feet.

Menjangan is extremely scenic both below and above the water. It is watched over by two rangers during the day, but is otherwise untouched by man. From a hilltop shelter, a volcanic silhouette of Bali can be seen on one side while the cloud-shrouded volcanoes of Java appear across the Bali Straits.

There are a number of other dives to be made on Bali, including other off-shore islands and an American shipwreck where the fish have been tamed by handfeeding. Gloria Maris Dive shop is located on the way from the airport going into Kuta and Denpasar. The owner, Mr. Yan, has been diving Bali for 15 years and knows his business. Rates are reasonable and a three-day discount package can be arranged. Equipment rental is quite high, however, so a serious diver should bring his or her own gear. Processing for E-6 and color prints is available at the many photo stores in the tourist area of Kuta.

It may seem like a great distance to travel, but there are shopping bargains galore, and food and lodging is very reasonable as the exchange rate of the U.S. dollar is very favorable. Kuta offers miles of excellent body surfing along a topless beach. Coconut oil massages are given right on the beach by Balinese women and can do a great deal to soothe aching diving muscles. In my opinion, Bali is worth the extra effort. **\$**

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Somewhere about  
50 feet off the bottom she  
burst apart spewing inner  
tubes and everything  
not nailed down...

## WORST

(Continued from page 35)

the other boats. Just then a tearing noise like 12 tomcats locked in a refrigerator screams up from the hull's bottom.

"Suspecting trouble, he shouts to a fisherman passing in a bass boat, who says the marker means 'rock.'

"Reactin' like a true-land lubber, Milton figures, 'Rocks! Head for deep water!' He cuts sharply away from shore, nearly swampin' the bass boat with his wake. Away from shore, he cuts the engine and lets out a sigh of relief. Then, feelin' secure with the depth finder showing about a hundred feet under his keel, he leaves his honey in charge on the bridge and bounds down the companionway to check for damage and try 'n figure out where the tomcat scream came from.

"After walkin' around inside a minute, Milton decides everything's ship-shape, fixes himself a Tom Collins and struts back to the bridge, confident as the captain of the Titanic. He smiles reassuringly at his lady, and sets his Tom Collins on the control board. A couple seconds later, the glass slides away as the Regal takes a sudden starboard list.

"That's odd," he remarks and leaps back down the companionway to find out what's goin' on. What's goin' on is the Regal's goin' down, something Milton realizes when he discovers six inches of water over his wall-to-wall carpet and getting deeper.

"With the sudden knowledge he's sinking, Milton grabs a couple sofa cushions he hopes float 'cause he doesn't remember where he stowed the life jackets, and zooms back up the companionway with the lake close at his heels.

"Yelling 'women and children first,' he dives overboard, which isn't much of a dive, because by now the fly bridge isn't that high above the water. Immediately the fisherman he nearly swamped hauls him into the bass boat where his girl friend's already comfortable. The \$150,000, 80-foot Regal plunges like a Trident sub on a crash dive."



"Wait a minute," I said, reaching for another warm beer, "You haven't explained the barge."

"Story's not over. What goes down often comes up—that's how I make my living. I met Milton the day after he'd been playin' U-boat skipper. He wanted a salvage quote, mine didn't make him too happy. Seems he hadn't quite gotten around to insuring his Regal, so salvage cost was coming out of his pocket. Saying he'd 'let me know,' he left, only to devise a disastrous fool scheme.

"Back in Atlanta Milton signs up for scuba lessons thinkin' he'd raise the boat himself. Now I've got nothing against people learning diving, in fact I think it's great, but sport diving and commercial diving are as different as drinking pop and drinking whiskey as Milton was about to learn.

"He finishes his lessons, buys himself some gear, borrows a friend's ski boat and sets about to find the Regal on the lake bottom.

"After about two day's diving with a buddy from his scuba class, Milton stumbles onto her at 95 feet sitting upright on the mud like she's moored back at Savalas Peak. That's awfully deep for green divers anywhere, let alone in a reservoir, and they're as green as guacamole martinis. Remember Rule One: Be an experienced diver.

"Milton decides to recover his wallet left in the main salon before she went down, so he slides open the glass door and kicks in, flicking his flashlight ahead like he's entering a haunted house. Ever been

in a sunk houseboat?

"Then you know what happened next. Sure enough, things not nailed down, especially linen, mattresses, cushions and pillows, were floating against the ceiling. Milton found himself bumbling around in a cold, dark, topsy-turvy furniture warehouse, with absolutely no sense of which way's up or out or what. He keeps running into things, finally backing into a blanket which wraps around him like a pancake on sausage.

"Panic grabs his gut and twists it into a granny knot, makin' him gulp air like he can breathe water when it's gone, which is exactly what he'd be doing if he didn't find his way out quick. He shucks the blanket, but he's still disoriented.

"Meanwhile, his buddy can't decide whether to come in after him. 'Decisions, decisions,' he thinks. After unsuccessfully trying to flip a coin underwater, he goes bopping in, trailing a guide rope as an afterthought. Milton should've had the guide rope in the first place, of course.

"Suddenly something clamps onto his forearm with the force of a starved Doberman, and what do you know, it's Milton signaling 'Out of air.'

"Sharin' one regulator, they follow their rope—you can imagine how smooth and calm that went—until they're outside. Lady Luck grudgingly decides to favor Milton, and they surface, owing to divine intervention rather than skill and competence.

"After all this, anyone with ordinary determination and common sense would've realized raising houseboats is a professional job and quit before someone got hurt. Milton was neither a quitter nor brilliant, and arrived two days later with 40 rented air tanks and 126 inner tubes, having cleaned out a tire wholesaler's stock."

"Don't tell me..."

"I'm afraid so. Milton Carson intended bringin' up his boat with inflated inner tubes, demonstrating Rule Two: You've got to be trained to raise houseboats. Any salvage diver surfacing his first cement block with a lift-bag knows you don't use

sealed containers for lifts.

"Milton and his buddy set to work 90 some feet down, with the tanks and tubes. They'd learned better than to go inside, so they started filling the tubes and shoving them in the doors and windows, figurin' when there's enough in there, the houseboat'll float up.

"They were right. After the boat had enough bloated tire tubes to make her look like Dunkin' Donuts worst nightmare, it shuddered, shook loose the bottom, and headed for the light. Milton and friends were so busy shakin' hands and clapping each other on the back underwater they forgot Rule Three: You break nature's rules only at your own risk, and one of those rules involves air and how it expands goin' up.

"Inside the Regal the rubber donuts swell and grow, stretching against her walls and ceiling, bringin' her up faster and faster. The higher she rises, the more they swell and push.

"Somewhere about 50 feet off the bottom, the Regal can't take any more, and she burst apart in every direction, spewing loose bloated inner tubes and everything not nailed down. Nothing survives but the flat hull, which passes the ascending duo on its way back to the bottom."

"That's the barge."

"That's what you thought was a barge. Anyway, the tubes can't handle but so much air, and burst before ever seeing the sun. Milton surfaces in a garbage slick looking like a flood at a furniture sale, with a lake Ranger waiting for him.

"The Ranger helps them in their boat, tickets them for polluting the lake and threatens another if it's not cleaned up before dark."

"I guess Milton learned his lesson."

"No doubt about it. When Daddy Carson gave him another Regal..."

"He bought Milton another one?" I gasped, choking on the last beer drizzle.

"He did. Saved money on the new one, though. Bought it without engines."

S



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## REEFS

(Continued from page 10)

ing, sitting or even lying on the sea bottom.

With diligence and forethought, we can find sandy spots or dead coral heads on which to stabilize ourselves. But sometimes, the thrill of an exciting subject overrides careful planning, and one lands atop a living coral colony which breaks under the photographer's weight.

Even the sturdy, rounded colonies such as star and brain corals cannot withstand diver contact. All stony coral species secrete mucus, a covering of slime capable of sluffing off sediments that would otherwise smother coral polyps. Contact with living coral surfaces removes the mucus. Although it can regenerate, continuous abrasion may cause permanent damage.

Photographers who feel the need to make contact with the bottom should look before they land. When it's time to move on, one can easily rise from the reef without kicking, by inflating the BC slightly, or sculling with a free hand.

Divers dress (sometimes quite fashionably) to protect ourselves more often from coral scrapes and cuts than water temperature. Ironically, body covering encourages intimate contact with the

reef because we know we're shielded by our wet suits, jeans, or body suits. Sadly, the more we protect ourselves from the corals, the less the corals are protected from us.

## Interaction With Reef Life

Nearly everyone is tempted, once he is comfortable in the water, to touch the reef and to interact with its residents. This seldom benefits the reef community in any way.

All divers should be discouraged from wearing gloves, because this encourages intimacy with tropical reef animals that shouldn't be touched. It may be fun to hold a tiny crab in one's hand, or to pick up a brittle starfish, but all too often, the animal acts instinctively and sheds a limb in order to free itself. This is its natural means of self-defense.

Divers who sit in barrel sponges break off the thin upper growing edge of the sponge, which may take the sponge months to repair. Divers who overturn rocks on the sea bottom in order to reveal creatures hiding beneath, often forget to replace the rocks in their original positions leaving small residents vulnerable to predators.

## Night Life

Diving after dark has a special appeal because creatures that hid by day now emerge to feed. Sleeping fishes too, are easier to photograph, and most of the stony coral species extend their polyps fully to filter-feed.

Residents of the night reef are particularly sensitive to disturbance, especially from glaring divers' lights. A sleeping fish is blinded by the light, and to escape is apt to rush headlong into the corals, injuring itself in the process.

The night diver's vision is limited to the narrow beam of his light which makes some people very uncomfortable. Thus they tend to collide with the fragile corals more so after dark. Divers must learn to treat the night reef as a special environment, and to tread very carefully.

## Feeding Fish

Many popular sites have become scenes of fish feeding frenzies where reef residents are trained to eat from divers' hands. Frequently, resident urchins are cut open with a diver's knife to feed the reef fish.

Sea urchins, like all reef creatures, play an important role in the ecosystem. They graze on algae, thereby keeping it from spreading unchecked and smothering the corals. Sites where urchins have been depleted show signs of algal overgrowth. Divers should carry food down with them, if they must feed the fish.

Algae can, in fact, take control on any

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coral surface that has been damaged by too much contact with divers; once the algae gains its foothold, the corals' heal-

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Squid spoil very quickly if they are not properly processed, so the squid fishermen usually take the squid to market first thing in the morning after a night of fishing.

Once you have an idea of where and when to go, there still are no guarantees. Sometimes they never really get started. The duration and intensity can vary. While diving to the sandy bottom to see the egg casings and all the bottom activity during daylight hours can be very interesting, without question the best dives are night dives. The numbers of squid are usually much higher at night as the animals seem to disappear for the most part into deeper water during the day. However, many animals such as sea lions, angel sharks, pilot whales, bat rays, and other creatures attracted by the squid often remain in the area where the egg casings have been planted. Several of these species are wary and prove difficult to approach during most div-

plained his customers arrived on the island determined to see the places they'd heard about; substitutes were unacceptable.

In reality, the much-promoted sites may not be the best ones any longer. Dive operators need to get together, find new areas, and promote them, giving the most popular spots a reprieve.

In the terrestrial environment, there is plenty of precedent. Many scenic areas are so fragile that access must be restricted. These include wild and scenic river and lake systems, as well as mountain trails. Several U.S. marine parks now limit the number of divers on any given day.

The Caribbean region is relatively small, yet it is highly accessible and thus sustains a large number of visiting divers. Diver damage to popular sites is becoming noticeable.

Unless some action is taken at our favorite tropical dive destinations, our children and theirs may be unable to experience to the fullest, the joy of diving as we know it today.

Diving with squid can be a tricky proposition. First you have to find the squid on your own since no dive stores or charter boats operate "squid tours." To determine when to dive, talk to squid fishermen at local docks and listen to a marine radio. You might also try to develop a contact at the local fish market.

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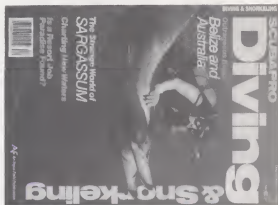
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## REEFS

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Algae can, in fact, take control on any

coral surface that has been damaged by too much contact with divers; once the algae gains its foothold, the corals' healing abilities are diminished.

### Anchors

Dive sites without permanent mooring buoys show deterioration from anchor stress. Not all boat captains are conscientious about placing anchors where there is no coral.

Even when anchors are carefully placed, severe damage can result. I once watched the anchor chain of a large, heavy vessel, manipulated by shifting winds, wrap itself around a coral head. The entire head, some 10 feet in diameter, was subsequently ripped off its base and dropped to the sea floor.

Divers noticing carelessness or neglect on the part of boat captains placing anchors need to speak up; generally, the customer has some clout. Few dive operators want to endanger their reputation in today's conservation-conscious industry.

### Overdived Sites

Some dive sites are in desperate need of a lengthy period of R and R (rest and recuperation). In other words, no human visitors until corals have had a chance to heal and begin regrowth.

However, diving operators and publications tend to promote specific sites when heralding a destination. As a result, the diver feels cheated if he cannot visit them.

I recently asked a dive operator why he used certain sites so often, sometimes joining two or more other boats full of divers, when other, less-used, attractive areas were available. He explained his customers arrived on the island determined to see the places they'd heard about; substitutes were unacceptable.

In reality, the much-promoted sites may not be the best ones any longer. Dive operators need to get together, find new areas, and promote them, giving the most popular spots a reprieve.

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### MADNESS

(Continued from page 46)

their stomachs are totally distended and there are squid hanging out of their mouths. Even then, the sharks continue to try to force more squid into their system. Such a scene tends to fulfill the definition of sharks as proverbial "eating machines." But in the wilderness, there are no guarantees or free meals. When an opportunity presents itself, those animals that are to survive must take maximum advantage.

During daylight, many birds join the feeding frenzy. In fact, large gatherings of birds often betray spawning squid.

Diving with squid can be a tricky proposition. First you have to find the squid on your own since no dive stores or charter boats operate "squid tours." To determine when to dive, talk to squid fishermen at local docks and listen to a marine radio. You might also try to develop a contact at the local fish market.

Squid spoil very quickly if they are not properly processed, so the squid fishermen usually take the squid to market first thing in the morning after a night of fishing.

Once you have an idea of where and when to go, there still are no guarantees. Sometimes the runs last for weeks and sometimes they never really get started. The duration and intensity can vary. While diving to the sandy bottom to see the egg casings and all the bottom activity during daylight hours can be very interesting, without question the best dives are night dives. The numbers of squid are usually much higher at night as the animals seem to disappear for the most part into deeper water during the day. However, many animals such as sea lions, angel sharks, pilot whales, bat rays, and other creatures attracted by the squid often remain in the area where the egg casings have been planted. Several of these species are wary and prove difficult to approach during most div-

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# Trivia Quiz Answers

1. B
2. C
3. Self Contained Underwater Breathing Apparatus
4. Increases drastically, doubling at 33 feet.
5. Oxygen becomes toxic at depths below 33 feet.
6. Don't hold your breath. The second rule is equalize slowly while maintaining control and following rule one.
7. In a double hose setup, both the first and second regulators are mounted on the air tank. In a single hose regulator, the first stage is on the tank and the second is held in the diver's mouth.
8. DOT is the Department of Transportation which sets standards for all high pressure cylinders. 3AA is the type of steel used, 3AA is chrome molybdenum. Z42137 is the

- tank manufacturer's serial number. TBS is the manufacturer's identification stamp or the inspector's stamp. 6-80+ is the month and year of initial qualification test. If the date is followed by a plus (+), the cylinder may be filled to 10 percent over marked working pressure for the first 5 years of its use.
9. Five
  10. A couple hundred pounds of air. Never store a tank empty as it is an invitation for moisture to enter the tank if the valve is left open.
  11. Air is an excellent insulator of heat energy and water is an excellent conductor. Water absorbs body heat 25 times faster than air.
  12. 60 feet per minute.
  13. The air tank pressure gauge. Diving without it is like flying a plane without a fuel gauge.
  14. An air embolism which involves

- a lung alveoli rupture where air bubbles travel to the brain. It is prevented by maintaining continuous, rhythmic breathing and ascending within the prescribed rate.
15. Pain
  16. B
  17. Because you can't equalize the pressure on your eyes as depth increases.
  18. Red with a diagonal white stripe.
  19. Rip currents travel out to sea, but can usually be observed from the beach and avoided. If you do become caught in one, inflate your buoyancy compensator and enjoy the ride. The rip will dissipate within a hundred yards or so. You can swim across a rip, but not against it and the current is very strong.
  20. Consider both as a single dive and add the surface time to the first dive.

S

ing situations, but with their bellies full and so much food so readily available, some become quite cooperative. Daytime dives can be a wonderful opportunity for photographers.

Nevertheless, the best dives are usually night dives on moonless, winter nights. Why moonless nights? Squid are attracted to lights. When the moon is

visible, light is spread all over the surface of the ocean and the squid spread out accordingly. On moonless nights, boats have a chance to attract the squid to the boat by using a powerful light referred to as a squid light.

Commercial squid fishermen anchor their boats an hour or so before sunset and turn on their lights. We have tried a

similar approach with success. Once the sun sets you must be patient. The squid might be attracted within an hour and come right up to the surface around your boat. That is called "floating" the squid. Some nights it takes hours, and the best diving doesn't occur until the ungodly hour of 3 a.m. No one said diving with squid would be easy. But, if you hit it right, the diving can be world class.

Some nights the squid never do come to the surface in great numbers. Making a scouting dive after two or three hours often pays off. Activity on the bottom near the egg casings can be very heavy without being visible from the surface. Usually the presence of large numbers of gulls and other birds, as well as sea lions, harbor seals, and pilot whales will announce squid are in the area even if you cannot see them at the surface.

Night diving with squid is definitely an adventure. If you get lucky and locate a dense run, odds are the squid will be almost immediately attracted to your dive light. Sometimes they will swarm around your light as they mate. And sea lions, bat rays, birds and other predators may swim right up to you in their search for a meal.

If you catch good water conditions in conjunction with the squid spawn, the diving can be absolutely magic. Your efforts will place you within the small fraternity of divers who have witnessed the phenomenon of the spawning squid and who love to explore the Southern California sand.

S

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### Recall of SCUBAPRO Heat-Sealed Stabilizing and Front Adjustable Jackets

SCUBAPRO is recalling all models and sizes of its Heat-Sealed type of buoyancy devices manufactured prior to April 28, 1988 to correct a potential problem with the overpressure/dump valve which, if defective could stick in the open position, preventing the device from holding air, and maintaining positive floatation. LOSS OF FLOATATION COULD ENDANGER THE USER, THEREFORE IT IS STRONGLY RECOMMENDED THAT THESE JACKETS NOT BE USED UNTIL THE VALVE HAS BEEN REPLACED.

This recall only affects the Heat-Sealed models. This valve can be distinguished from the valve used on the standard model jackets by its size, about 2½ inches in diameter and conical shape. The replacement valves can be identified by the two opposing spanner wrench holes in the cover of the valve assembly. Any previous configuration valves do not have these holes and should be replaced. The valves used on the standard model jackets are larger (2¾ inches diameter) and flat rather than cone shaped, and are not affected by this recall.

Please return these jackets to any authorized SCUBAPRO Dealer or the SCUBAPRO factory at 3105 E. Harcourt St., Rancho Dominguez, CA 90221. Repairs will be made free of charge and the owner will receive a complimentary one-year subscription to *Diving and Snorkeling* magazine.



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